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A Message From President Bower

THE AMERICAN Veterinary Medical Association was born eighty-one years ago this summer. It was organized during the War between the States primarily for the purpose of aiding the war effort: to protect the health of military mounts and food-producing animals and thus aid in prosecuting the war to a successful end. Likewise today, veterinary medicine is playing an important rôle in another war. As in all great conflicts, the commanders recognize their dependence upon animals both for transportation and as a source of wholesome food. Therefore, veterinary medicine has again been called upon to make its contributions and sacrifices. The call is being answered. Veterinarians are doing their utmost as citizens and in their professional capacity, that freedom shall not perish. Practitioners are working long hours, many beyond their normal physical endurance. Many render service for which they receive no compensation. They do not strike; they know there's a job to do and they are determined to do it. All branches of the service are involved: regulatory officials of the federal, state, and municipal governments; the educational institutions; the research laboratories; the commercial firms; and the Veterinary Corps. All are laboring long hours in their specialized fields for a common cause. Veterinarians of the Americas! I salute you.

President Charles W. Bower

But let us not be too complacent. This is not the time to rest on our oars and view our laurels with satisfaction. There is heavy fighting ahead and an all-out effort must be made. Faced with a scarcity of feed, better care must be given to the fewer number of animals, lest greater waste be incurred. Healthy animals utilize feed profitably, sick ones waste it. Furthermore, animals producing at a high rate require greater care to maintain their health and their productivity. Prompt and accurate diagnosis and a more specific therapy are expectations from the general veterinary practitioner of today. For these reasons, particularly now, the practitioner should avail himself of all opportunities to gather new ideas and the results of research, and employ the newer methods of treatment.

With this thought in mind, the AVMA

has prepared a practitioner's program for its eighty-first annual convention. While abbreviated, the program will last three full days. Business will be conducted before the meeting, or at night during the meeting, thus giving those who attend the opportunity to hear something worthwhile to take home and put to use. There will be lectures, panel discussions, and colored motion pictures, planned to disseminate up-to-date information. If the members of the veterinary profession are to meet the challenge they have so generously accepted, such meetings are necessary to assist in food conservation and production so that our armed forces may continue to be the best fed soldiers in the world, and so that the civilian population will have sufficient food to carry on the essential war industries and other home front duties. When our Army marches into Berlin and Tokyo there will be others there in spirit—among them, you who have helped to produce vital food and thus assisted the men and women of the armed forces to win this long and trying struggle.

Since the profession has expanded its scope of usefulness, organized veterinary medicine has become more and more important. But for the efforts of the AVMA, it could not have ranked as high among the learned professions as it does today. To be directly credited to its untiring efforts are such accomplishments during this emergency as gasoline, tire, and other priorities for veterinarians on equal terms with those of other essential industries, and providing civilian veterinary service through the deferment of draft-age veterinarians. While the latter has not been 100 per cent effective, the civilian service has been preserved; veterinary education has been continued; and an active part has been taken in preserving and establishing a stronger federal bureau of animal industry and meat-inspection service. Public relations with the livestock industry has been expanded during the last year, principally with the idea of aiding in food production, and protecting the public against transmissible diseases. While this type of public relations is serving the immediate purpose of wartime, it will long endure and create a better understanding between the public and the veterinary profession.

These, among many other accomplishments of recent months, benefit all veterinarians regardless of the branch to which they belong. All members of the profession should, therefore, consider it a privilege and a duty to actively support the organization since all share the achievements alike. Why should some be riding while others pull the load? No profession is better than its members. If the members do not concern themselves in its future, and help to mould its destiny, the profession will not advance and grow, and that is not the job of a certain group but rather the duty of all. Are you riding or are you on the team helping to pull? Now is the time to join the team and pull, for organized veterinary medicine was never more essential than now, and if the profession is to maintain and increase its usefulness, it will be still more essential in the future.

Sincerely,
(Signed) CHARLES W. BOWER, *President.*

The Chicago Skyline

EIGHTY-FIRST ANNUAL SESSION

American Veterinary Medical Association

Palmer House, Chicago — August 22-24, 1944

The eighty-first annual meeting will be held in Chicago, Aug. 22-24, 1944. Hotel headquarters will be the Palmer House where all sessions and program features will be held, including exhibits.

The meeting has been planned to be of special interest and value to veterinary practitioners. To this end, the scientific program will consist largely of papers and panel discussions on current problems, all presented in five general sessions. In addition, there will be a special selection of motion pictures which will take the place of clinical demonstrations as such.

The Board of Governors will meet on Sunday, August 20, and the Executive Board at 9 a. m., Monday, August 21. Committees which desire to hold meetings will be scheduled for either Sunday or Monday, August 20 and 21.

The House of Representatives will convene for its first session at 7 p. m. on Monday, August 21, and for its second session at 8 p. m., Tuesday, August 22. Evening sessions of the House are necessary in order to devote three full days to the scientific program, and to avoid conflicts with other events.

Registration will begin on Monday afternoon, August 21 and the official opening will be at 10 a. m., Tuesday, August 22.

Alumni meetings are scheduled for Tuesday evening, August 22. Dinner meetings will be arranged for those groups desiring them.

Condensed Program

Sunday, August 20. 10 a. m.: Meeting of Board of Governors; committee meetings. 2 p. m.: Board of Governors.

Monday, August 21. 9 a. m.: Executive Board session; committee meetings. 2 p. m.: Registration begins; Executive Board session; committee meetings. 7 p. m.: House of Representatives, first session.

Tuesday, August 22. 8:30 a. m.: Registration. 10 a. m.: Opening session. 12:30 p. m.: Luncheon meeting for delegates from Junior AVMA Chapters. 1:30 p. m.: Motion pictures. 2:00 p. m.: General session, followed by nomination of officers. 4 p. m.: Informal reception, Women's Auxiliary. 6 p. m.: Alumni dinners and meetings. 8 p. m.: House of Representatives, second session.

Wednesday, August 23. 9 a. m.: Motion pictures. 9:30 a. m.: General session. 12:30 p. m.: Women's Auxiliary luncheon and annual meeting. 1:30 p. m.: Motion pictures. 2 p. m.: General session. 6:30 p. m.: Annual banquet, entertainment, President's reception and dance.

Thursday, August 24. 9 a. m.: Motion pictures. 9:30 a. m.: General session. 11 a. m.: Breakfast party for women. 1:30 p. m.: Motion pictures. 2 p. m.: General session; installation of officers; adjournment.

Hotel Accommodations and Rates

The Palmer House is convention headquarters. It has several hundred rooms available for reservation by those who plan to attend the AVMA meeting. Although no other convention is scheduled for the Palmer House during the week of August 20, early reservations are urged because all Chicago hotels are crowded these days. Reservations can be made now and cancelled later, if plans to attend the convention have to be altered.

Palmer House

The rates at the Palmer House are as follows:

Single room with bath: $3.85, $4.40, $4.95, $5.50, $6.60, $7.70 and $8.80.

Double bed room and bath for two persons: $5.50, $6.60, $7.15, $7.70, $8.80 and $9.90.

Twin bed room and bath, for two: $6.60, $7.15, $7.70, $8.80, $9.90, $11.00 and $12.10.

Suites $13.20 and up for 1 person; $15.40 and up for 2 persons.

A limited number of air-conditioned rooms are available and will be reserved on request while they last.

Chicago has a large number of hotels conveniently located in or near the Loop district for those who may wish to make reservations elsewhere than at convention headquarters. Among these may be mentioned the Stevens, LaSalle Hotel, The Chicagoan, Hotel Morrison, Hotel Sherman, Hotel Bismarck and the Drake. Be sure to have "confirmed reservations" at the hotel selected.

Women's Auxiliary

The Women's Auxiliary will hold its luncheon and annual business meeting on Wednesday, August 23. Present plans also provide for an informal reception for the women in attendance on Tuesday afternoon, August 22, and a breakfast on Thursday morning, August 24.

A special feature of the Auxiliary luncheon and meeting on Wednesday will be a talk by Madame Julia Marie S. Colbjornsen, wife of the financial counsellor of the Norwegian Embassy in Washington. Mme. Colbjornsen, a graduate nurse, served as a trained veterinary nurse in the large veterinary hospital in Oslo, Norway. She and her husband had some breath-taking experiences in escaping from the Germans at the time of the Nazi invasion of their country. Mme. Colbjornsen is active in Red Cross work in this country, is an accomplished speaker and one of the most popular members of the Red Cross Speakers Bureau in Washington. Her subject for the Auxiliary meeting is "My Escape from the Nazis". She will also address one of the general sessions on the subject, "Livestock in Wartime Norway."

Motion Picture Demonstrations

With the help of the Special Committee on Motion Picture Library of the AVMA, a program of motion picture demonstrations and films of special interest is being arranged. These will follow the general pattern of the "Clinical Depictions" which were so successfully and satisfactorily presented at the 1942 convention in Chicago instead of operative clinics.

The film presentations will cover various phases of surgery and medicine, infectious diseases and their control, and topics of related interest to veterinary medicine. In so far as possible, motion pictures are being selected which have previously had only limited showings, if any, before veterinary audiences.

Transportation

Those who are planning to attend the convention are again urged to arrange railroad and Pullman accommodations for the entire trip as early as possible. According to present rules, Pullman space can be reserved 30 days in advance. The entire trip should be planned so as to secure railroad accommodations, including Pullman, for coming to Chicago and returning home. In this way, difficulties with return transportation will be avoided.

Radio Program

The public relations department of the AVMA and the Committee on Public Relations is planning to arrange radio broadcasts during the meeting. Because of wartime conditions, radio time is very difficult to obtain but it is hoped that several speakers can be placed on farm programs and special broadcasts. Announcement of the radio schedule will be made at the convention.

The Technical Exhibits

After a one year lapse in this feature of AVMA conventions, the leading manufacturers and distributors of veterinarians' supplies will be represented in the exhibits which will be displayed in the Exhibition Hall of the Palmer House. Thirty-four companies have already reserved the entire 40 booths provided for the exhibits this year. The displays will be both colorful and informational and will provide the veterinarians in attendance an opportunity to meet the manufacturers and distributors or their representatives, and to see their products.

Following is a complete list of the commercial exhibitors and their booth numbers.

	Booth No.
ABBOTT LABORATORIES, North Chicago, Ill.	35
ARMOUR & COMPANY, Veterinary Division, Kansas City, Kans.	24
BECTON, DICKINSON & CO., East Rutherford, N. J.	16
BILHUBER-KNOLL CORP., Orange, N. J.	19
CAMPBELL X-RAY CORP., Boston, Mass.	12
CARNATION COMPANY, Milwaukee, Wis.	11
CIBA PHARMACEUTICAL PRODUCTS, INC., Summit, N. J.	25
CORN BELT LABORATORIES, INC., East St. Louis, Ill.	37
THE CORN STATES SERUM COMPANY, Omaha, Nebr.	8
CURTS-FOLSE LABORATORIES, Kansas City, Kans.	18
CUTTER LABORATORIES, Chicago, Ill.	39–40
EISELE & COMPANY, Nashville, Tenn.	20
FORT DODGE LABORATORIES, Fort Dodge, Iowa	28–29
GENERAL ELECTRIC X-RAY CORP., Chicago, Ill.	34
HAVER-GLOVER LABORATORIES, Kansas City, Mo.	9–10
JENSEN-SALSBERY LABORATORIES, INC., Kansas City, Mo.	22–23
THE KELLEY-KOETT MFG. CO., INC., Covington, Ky.	1
KELLOGG COMPANY, Battle Creek, Mich.	26
LEDERLE LABORATORIES, INC., New York, N. Y.	27
ASHE LOCKHART, INC., Kansas City, Mo.	32
MCMILLEN FEED MILL, Fort Wayne, Ind.	31
MERCK & CO., INC., Rahway, N. J.	33
THE NATIONAL LABORATORIES CORP., Kansas City, Kans.	21
NORDEN LABORATORIES, Lincoln, Nebr.	5–6
PURINA MILLS, St. Louis, Mo.	2
PITMAN-MOORE COMPANY, Indianapolis, Ind.	3–4
THE QUAKER OATS COMPANY (KEN-L-PRODUCTS DIVISION), Rockford, Ill.	38
SHARP & DOHME, INC., Philadelphia 1, Pa.	14
R. J. STRASENBURGH CO., Rochester, N. Y.	17
SWIFT & COMPANY, PARD FOOD DIVISION, Chicago, Ill.	30
VITAMINERAL PRODUCTS COMPANY, Peoria, Ill.	7
WILSON & COMPANY, INC., Chicago, Ill.	36
WINTHROP CHEMICAL COMPANY, New York 13, N. Y.	15
WYETH INCORPORATED, Philadelphia 3, Pa.	13

Tentative Program

The following preliminary program is subject to rearrangement and additions between now and the time of the convention.

All sessions will be held in the Grand Ball Room of the Palmer House.

Opening Session

TUESDAY, AUGUST 22 — 10 A. M.

Music.
Call to Order by the President, Charles W. Bower.
Invocation.
Music.
Address of Welcome.
Response.
Greetings from the Women's Auxiliary by Mrs. J. C. Schoenlaub, President.
Address of the President.
Presentation of Awards by Oscar V. Brumley, Chairman of the Executive Board:

Service Scroll to President Charles W. Bower.
Gold Key to President-Elect James Farquharson.
Twelfth International Veterinary Congress Prize.

Presentations by President Charles W. Bower, Chairman, *ex officio*, AVMA Committee on Awards:

AVMA Award.
Borden Award and Medal.

Presentation of Award by Wesley A. Young, Chairman, Special Committee on Humane Act Award.
Announcements by H. Preston Hoskins, General Chairman, Committee on Local Arrangements.

General Sessions

TUESDAY, AUGUST 22 — 1:30 P. M.

1) Motion Pictures.
2) The Veterinarian's Place in Livestock Loss Prevention—J. A. Barger, Inspector in Charge, U. S. Bureau of Animal Industry, Des Moines, Iowa.
3) Newer Information on the Rôle of Vitamins and Minerals in Animal Health—J. S. Hughes, Professor of Biochemistry, Kansas State College, Manhattan, Kans.
4) Panel Discussion on Parasite Problems.
   Kent R. Dudley, Practitioner, Iola, Kans., *chairman*.
   E. A. Benbrook, Head, Dept. of Veterinary Pathology, Iowa State College, Ames, Iowa.
   M. M. Leonard, Practitioner, Asheville, N. Car.
   B. T. Simms, Director, U. S. Regional Animal Disease Research Laboratory, Auburn, Ala.
   D. E. Trump, Practitioner, Owatonna, Minn.
5) Nomination of Officers.

WEDNESDAY, AUGUST 23 — 9 A. M.

1) Motion Pictures.
2) Some Useful Techniques in Dairy Practice—C. Harvey Smith, Practitioner, Crown Point, Ind.
3) Surgery and Obstetrics in the Bitch and Cow—Herman Dykema, Practitioner, Muskegon, Mich.
4) Hormonal Therapy in Relation to Veterinary Practice—R. P. Reece, Assistant Professor of Dairy Husbandry, College of Agriculture, New Brunswick, N. J.
5) Panel Discussion—Joint Program of Sections on General Practice and Surgery and Obstetrics.
   T. H. Ferguson, Practitioner, Lake Geneva, Wis., *Chairman.*
   F. A. Hall, Practitioner, Garrett, Ind.
   Vilo T. Rose, Practitioner, Elkton, Ky.
   J. E. Weinman, Practitioner, Lincoln, Nebr.
   F. M. Wilson, Practitioner, Mechanicsville, Iowa.
   Walter Wisnicky, Practitioner, Fond du Lac, Wis.

WEDNESDAY, AUGUST 23 — 1:30 P. M.

1) Motion Pictures.
2) Agricultural Research During and After the War—E. C. Auchter, Research Administrator, Dept. of Agriculture, Washington, D. C.
3) Penicillin—W. E. Herrell, M.D., Mayo Clinic, Rochester, Minn.
4) Gastroenteric Disease in Swine—H. C. H. Kernkamp, Professor of Veterinary Medicine, University of Minnesota, St. Paul, Minn.
5) Sulfathalidine Therapy of Porcine Enteritis—Robert Graham, E. H. Peterson, C. C. Morrill, H. J. Hardenbrook, G. E. Whitmore, and P. D. Beamer, Dept. of Animal Pathology and Hygiene, University of Illinois, Urbana.
6) Panel Discussion on Swine Diseases.
   Frank Breed, Director of Laboratories, Norden Laboratories, Lincoln, Nebr., *Chairman.*
   J. B. Bryant, Practitioner, Mt. Vernon, Iowa.
   Robert Graham, Head, Dept. of Animal Pathology and Hygiene, University of Illinois, Urbana.
   J. L. Jones, Practitioner, Blackburn, Mo.
   J. E. Peterman, In Charge of Swine Erysipelas Field Investigations, U.S.B.A.I., Lincoln, Nebr.
   J. D. Ray, Director of Biological Production and Diagnosis, The Corn States Serum Co., Omaha, Nebr.
   T. L. Steenerson, Practitioner, Wilkinson, Ind.

THURSDAY, AUGUST 24 — 9 A. M.

1) Motion Pictures.
2) Non-parasitic Skin Diseases—C. P. Zepp, Practitioner, New York, N. Y.
3) Immunization Against Canine Distemper—E. C. Khuen, Practitioner, Evanston, Ill.

4) Proteins and Vitamins in Relation to Nutritional Deficiency of Mother's Milk—M. L. Morris, Executive Secretary, Committee on Foods, New Brunswick, N. J.

5) Studies on Derriengue—Fernando Camargo, Bacteriologist, Dept. of Animal Health, National University of Mexico, Mexico, D. F.

6) Panel Discussion on Brucellosis.
W. L. Boyd, Chief, Division of Veterinary Medicine, University of Minnesota, St. Paul, Minn., *Chairman.*
C. H. Case, Practitioner, Akron, Ohio.
R. A. Hendershott, Chief, Bureau of Animal Industry, Trenton, N. J.
L. M. Hutchings, Assistant, Dept. of Veterinary Science, Purdue University, Lafayette, Ind.
G. W. Jensen, Practitioner, Antioch, Ill.
Herbert Lothe, Practitioner, Waukesha, Wis.
A. E. Wight, Chief, Tuberculosis Eradication Division, Bureau of Animal Industry, Washington, D. C.

THURSDAY, AUGUST 24—1:30 P. M.

1) Motion Pictures.

2) The Newer Sulfonamides in Veterinary Practice—W. T. S. Thorp, Assistant Professor of Animal Pathology Research, Pennsylvania State College, State College, Pa.

3) Differential Diagnosis of Respiratory Diseases of Fowl—J. P. Delaplane, Poultry Pathologist, Agricultural Experiment State, College Station, Texas.

4) Specific Diagnosis and Chemotherapy of Avian Coccidiosis—P. P. Levine, Assistant Professor of Pathology and Bacteriology, New York State Veterinary College, Ithaca, N. Y.

5) Panel Discussion on Poultry Diseases.
Cliff D. Carpenter, Chief Executive Officer, Institute of American Poultry Industries, Chicago, Ill., *Chairman.*
(Panel to be selected by Dr. Carpenter and Committee on Poultry.)

6) Installation of Officers.
Adjournment.

Committee on Local Arrangements

General Chairman: H. PRESTON HOSKINS, Evanston.
General Secretary: J. G. HARDENBERGH, Chicago.
Committee Chairmen:
Alumni Meetings—O. NORLING-CHRISTENSEN, Wilmette.
Banquet—E. C. KHUEN, Evanston.
Entertainment—C. L. MILLER, Oak Park.
Exhibits—E. E. SWEEBE, North Chicago.
Motion Pictures—C. B. KRONE, LaGrange.
President's Reception and Dance—C. N. BRAMER, Evanston.
Public Relations—W. A. YOUNG, Chicago.
Women's Auxiliary Activities—MRS. C. L. MILLER, Oak Park.

Diagnostic Chart of Swine Erysipelas

J. E. PETERMAN, D.V.M.

Lincoln, Nebraska

The following chart is the appendix of an address made before the Indiana Veterinary Medical Association, Jan. 11-13, 1944, which caught the eye of Dr. H. W. Schoening, in charge of the Pathological Division of the U. S. Bureau of Animal Industry, as an "outstanding aid for practitioners in the diagnosis of swine erysipelas in the field." The full transcript of the address was published in the bound report of the meeting which can be procured from Secretary H. A. Lidikay, Darlington, Ind. The object is to fill out the columns "Yes and No" (in the presence of the herd) and sum up the results.

PART 1.—SYMPTOMS CHARACTERISTIC OF SWINE ERYSIPELAS

	YES	No.
1)—Sudden death, either of 1 animal 3 to 10 days prior to, or of 1 or more at the onset of the herd attack	...	...
2)—Crisis reached quickly and of short duration	...	...
3)—Several sicken simultaneously.	...	...
4)—Disinclined to move. Show pain, soreness, stiffness or trembling when aroused	...	...
5)—Equalizing body weight on all four feet when standing	...	...
6)—Unexpected vitality when aroused	...	...
7)—Temperatures in the herd vary from 104 to 108 F. or more	...	...
8)—Acute sickness about 1 week after being fed a carcass or offal	...	...
9)—Labored breathing; mucus in nostrils	...	...
10)—Whooping cough; vomiting	...	...
11)—Fair appetite in visibly sick hogs	...	...
12)—Eyes clear, alert	...	...
13)—Feces normal	...	...
14)—Firm raised plaques on back or sides (diamond skin disease). Scarlet edematous areas of skin on body, snout, ears, legs, axillary or perineal region	...	...
15)—Major death losses occur during initial stage of the disease	...	...
16)—Recovery of sick animals within 3 to 4 days	...	...
Total	...	...

PART 2.—SYMPTOMS CHARACTERISTIC OF CHRONIC ERYSIPELAS

	YES	No.
1)—Skin sloughing on back or shoulder limited to 1 or 2; not confined to white skin only	...	...
2)—Tail sloughing (after pigs are 5 to 6 weeks of age)	...	...
3)—Tips of ears dry, harden, later slough	...	...
4)—Lameness in heavy hogs	...	...
5)—Enlarged joints, soreness, stiffness; thickened tendon sheaths	...	...
6)—Loss of hair, either slight thinning or extensive; in irregular patches, or from diamond skin formations only	...	...
Total	...	...

PART 3.—SYMPTOMS NOT CHARACTERISTIC OF SWINE ERYSIPELAS

(Characteristic of Hog Cholera)

1)—Loss of appetite	...	...
2)—Gradual sickening; no recoveries	...	...
3)—Temperatures averaging 105 to 106 F. in all animals sick for several days	...	...
4)—Weak; staggering gait	...	...
5)—Extreme exhaustion; crossing of hind legs	...	...
6)—Spasmodic convulsions	...	...
7)—Watery diarrhea	...	...
8)—Gummy eyes	...	...
9)—Purplish discoloration of skin on animals dead or approaching death	...	...

Characteristic of other diseases

10)—Emaciation; diarrhea; appetite	...	...
11)—Blood in feces	...	...
12)—Superficial skin sloughing confined to white skin only	...	...

The author is inspector in charge of swine erysipelas in Nebraska for the U. S. Bureau of Animal Industry. Assistance of A. G. Beagle, D.V.M., in preparing the chart, is acknowledged.

	YES	NO.
13)—Rhinitis, sneezing with distortion of nose	...	...
14)—Goose stepping with hind legs	...	...
15)—Tail sloughing on very young pigs	...	...
16)—Soft enlarged joints in suckling pigs	...	...
17)—Eczematous condition on face and body in young pigs	...	...
18)—Itching and scratching in young pigs	...	...
Total	...	...

REMARKS ABRIDGED

Part 1.—Sudden deaths may or may not occur. In acute cases, deaths occur prior to or at the onset of the herd attack. The whole herd, or any part, may sicken within twenty-four hours and the acute sickness is usually short. Stiffness, pain, soreness, and trembling are characteristic symptoms. The sick equalize weight on all fours. Hogs that are down show unexpected vitality when aroused. Temperatures among the sick vary (104 to 108 F.), not uniform as in cholera. Acute sickness frequently follows one week after feeding a horse, cow, or sheep carcass, or offal (reason not known). Diarrhea not a symptom in swine, though some occurs. Some have edematous lungs, whooping cough and vomiting. The cough is a real whoop. The appetite is fair. Unlike in cholera, visibly sick hogs when aroused will eat (a simple but important observation). The eyes are clear and alert, even when lying down, watching every move that is made. Diagnosis of erysipelas may often be made just from the alert, watchful eyes. In cholera, the hog is so sick he doesn't care what happens. The feces are normal in acute uncomplicated cases. Firm raised plaques along the back. Skin bright red when affected. Sometimes the snout is red, swollen, and tender. The major death losses occur during the initial stage of the outbreak, the opposite is true of cholera, though in erysipelas occasional deaths continue to occur. Improvement of the sick distinguishes the disease from cholera.

Part 2.—Skin sloughing on back and shoulders limited to 1 or 2 in a herd. If a larger number are so affected, the lesions are probably not those of cholera. Tail sloughing in young pigs (5 to 6 weeks old). Ear tips dry, harden, and later slough. Heavy hogs are lame. Joints stiff, swollen, sore; tendon sheaths thickened. Loss of hair (diamond skin disease) may be slight or extensive.

The clinical picture, not the autopsy, is the important thing in the diagnosis of swine erysipelas. One should diagnose the disease before the postmortem examination, which is sometimes misleading, and sometimes a wasteful loss of hogs that would have recovered if not killed for the autopsy. In short, study the symptoms.

Reports of Pneumoencephalitis

Federal veterinary inspectors and state livestock authorities engaged in disease control work have been cautioned by the U. S. Department of Agriculture about possible dangers from avian pneumoencephalitis. The malady somewhat resembles the more familiar poultry disease, laryngotracheitis.

The only cases of avian pneumoencephalitis officially reported thus far, according to Dr. A. W. Miller, chief of the Bureau of Animal Industry, have been in California flocks. The disease is caused by a virus and intensive studies are in progress in that state, particularly on vaccination procedures. Mortality has been greatest in birds under 10 weeks of age, the average being about 5 per cent. Losses to poultry owners have been principally from retarded development of the birds and reduced egg production.

The notice issued by the Bureau of Animal Industry concerning the disease points out that thus far in California it has shown no tendency to assume a more severe character. There is a possibility, however, of its becoming more virulent if introduced into a new area. Dr. Miller requests that cases suspected of being this or any other unusual disease be promptly reported to state or federal veterinary officials.

The commercial banks would buy all the War Bonds the government has to offer, but that would not tap the "inflationary currency" in the hands of the people.

The Need of Vital Statistics on Animal Diseases

A. H. QUIN, D.V.M.
Kansas City, Missouri

CRITICALLY speaking, there has been not a little of the Don Quixote in American animal-disease control these past fifty years. Bluntly told, we fight diseases without dependable data on either their general or sectional prevalence, and yet we have the audacity to seek vast appropriations from state and national legislative bodies to finance control measures. The ability to cite definite, statistical records on morbidity, mortality, and financial losses is lacking. Under such circumstances, it is little wonder that appropriations for animal-disease control are inadequate and hard to procure.

Equally important is that research workers have no tabulated facts on vital statistics relating to animal infections and contagions. Much of their work could have been better directed and would have given taxpayers better returns for their investments if research projects had been directed at diseases most in need of attention.

Lastly, permitting living virus and bacterial vaccines to be peddled without restraint to the laity complicates matters, because no data on the number and extent of epizoötics traceable to the misuse of them can be collected.

Collectively, veterinarians have never shown particular fondness for paper work. Filing reports and kindred material being neither pleasure nor recreation, they probably do not differ from any other group in this respect. However, a veterinarian has not discharged his duty to country or profession if he neglects to report contagious diseases to the proper authorities. It is not asking too much that every veterinarian assume the responsibility to coöperate to the fullest extent with state and national livestock authorities by helping them to compile vital statistics on animal diseases.

Surveying the situation, one finds that promptly reporting contagious diseases of animals is a statutory mandate in 29 states. Failure of a veterinarian to report them carries penalties ranging from a small to a heavy fine or/and imprisonment to revocation of his license to practice. In four states, contagious diseases are reportable under duly authorized departmental regulations. Such reports are also mandatory. In three states, contagious diseases are reportable under both the statutes and departmental regulations. Four states have neither laws, regulations nor penalties pertaining to this step.

Nationwide reporting of animal diseases is also hindered by the vast areas in which there is no convenient access to the services of graduate veterinarians. In these sections, the responsibility of reporting contagious diseases falls to brand inspectors, county farm advisers, and other nonveterinary personnel, or to the scattered field veterinarians of the state or federal government.

Even though nationwide vital statistics on animal diseases are an urgent need, the mere supplying of veterinarians with postcards or forms to fill in and return to stated officials would be futile in the absence of general coöperation among state livestock sanitary authorities in obtaining, filing, and correlating the reports. An educational program not only for veterinarians but also for the entire livestock industry may be necessary to develop interest in the importance of obtaining such data.

The compilation of statistical data being a national necessity, it appears that the most feasible solution would be for the Bureau of Animal Industry, United States Department of Agriculture, to establish a Division of Vital Statistics charged with the duty of collecting the information needed. Were such a division established, it should have the fullest support of the AVMA, the state and regional associations, and every veterinarian in the field of practice.

Contribution from the chairman of the Special Committee on Vital Statistics, AVMA.

Buying War Bonds and stamps is a specific remedy for wartime inflation and postwar depression.

Nematode Parasitism of Sheep

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AS INDICATED by the postmortem records of the Department of Animal Pathology of the Kentucky Agricultural Experiment Station, internal parasites, malnutrition, improper housing and faulty management are the underlying factors responsible for approximately 65 per cent of the disease problems in the farm flocks of Kentucky. During a period of six years, 1937 through 1942, postmortem examination was made on sheep and lambs from 755 flocks. From this group, 52.34 per cent of the diagnoses were limited to three conditions: internal parasites, 27.94 per cent; malnutrition, including pregnancy disease, 12.48 per cent; and pneumonia, 11.92 per cent. Other conditions, usually associated with improper feeding and poor management, account for 12.99 per cent of the total number of autopsies performed during the six-year period. This group includes several forms of mineral and plant poisoning, navel infection, heat prostration, lamb dysentery, drenching injuries, and over-feeding. The remaining 35 per cent of the diagnoses covers a group of 50 other conditions.

DIAGNOSIS

The usual symptoms of parasitism in sheep are unthrifty appearance, loss of condition, anemia, subcutaneous edema, and diarrhea. All of these may be present but they vary considerably in individuals and in different flocks. Lambs in good condition are frequently found to be dying from acute haemonchosis. These lambs are dull, inactive, show the classical anemia and edema, and may exhibit extreme weakness and dyspnea. In such lambs, the mortality may be so rapid that the owner suspects an acute contagious disease. This rapid mortality rate is frequently observed in periods of hot weather.

Those animals having mixed parasitic infection are usually in poor condition and show varying degrees of anemia. Diarrhea may or may not be present. Diagnosis in these cases depends upon the flock history and a careful postmortem examination, preferably on a typical specimen which can be killed for autopsy. Microscopic examination of fecal material from the animal greatly assists in making a diagnosis when there is an infection with small intestinal worms. The flotation procedure provides an easier means of establishing the presence of intestinal parasites than does a painstaking search of the small intestine. In these animals, very high egg counts are frequently found when they are nearly free of stomach worms. One should avoid being confused by the absence of parasites or parasite ova in those sheep which have recently received an anthelmintic and in those suffering from a diarrhea for several days. In such animals, the diagnosis must be derived from the history and the appearance on postmortem examination.

GROSS PATHOLOGY

Pathological changes have been studied on a limited number of heavily parasitized and poorly fed sheep. Tissues were selected from moribund animals and from those which had been dead only a short time. Most of the group were heavily parasitized with *Haemonchus contortus,* while others had an intense, mixed parasitic infection.

In acute cases of haemonchosis, the carcass may carry considerable fat, but in less severe, chronic infections, it may be very thin. Anemia is usually severe. Red cell counts ranging from 1 1/2 to 3 millions, and cell volume percentages varying from 5 to 10 are frequently found. Variable amounts of subcutaneous edema are found and fluid is present in the body cavities. Some gastritis is usually present. The common stomach worm is found in the abomasum. However, one may fail to find many worms in the fourth stomach if the specimen has been dead for a few hours, or if a profuse diarrhea has been present for a few days.

In those animals in which *H. contortus* comprises a minor part of the parasitic

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load, the anemia is less severe. The body condition is usually thin, and it may be in a state of emaciation. Evidence of gastritis and enteritis are usually found, and these vary with the severity of the infection. Small white nodules, 1 to 2 mm. in diameter, situated superficially in the mucosa of the small intestine, have been observed. These lesions appear to be the same as those in lambs with experimental infection with *Cooperia curticei* as described by Andrews.[1] Lesions caused by nodular worms are found in nearly all sheep which are brought to this laboratory.

Gross changes in the solid visceral organs have been limited to the liver, kidneys, heart, and occasionally the lungs. The liver shows graded degrees of fatty change and some rolling of the cut edges. Abscesses resulting from the nodular worm larvae are infrequently found in this organ. The kidneys are usually pale in color, somewhat flabby, show some swelling, and frequently show evidence of fatty changes. The heart appears pale and flabby. Pneumonic changes in the anterior lobes of the lungs are frequently found.

HISTOPATHOLOGY

Histological study was made of the diseased organs in numerous sheep. The material was stained with hematoxylin and eosin. The microscopic, pathological changes are confined principally to the liver and kidneys. The group studied was diagnosed on postmortem examination as heavily parasitized, or parasitism and malnutrition.

Livers from 28 selected cases were studied, and in 25 both albuminous and fatty degeneration were found. The albuminous degenerative change was usually less apparent than the fatty change, and the condition varied from a slight change to very severe fatty degeneration. Central necrosis was observed in 5 cases. In one specimen, there was fatty infiltration only, and in another only albuminous degeneration.

Kidneys from 29 selected cases were studied. In 18 of the kidneys, there was albuminous degeneration and vacuole formation in the cytoplasm of the tubular epithelium which was interpreted as fatty degeneration. Four of this group showed necrosis of the epithelium in the proximal, convoluted tubules, and in 3 kidneys the epithelium was judged as atrophic. In 4 cases, there was evidence of glomerulonephritis, with 1 showing an increase in interstitial tissue.

Other tissues studied were: the heart, adrenal glands, thyroid, pituitary, pancreas, spleen, and lymph nodes. The heart was regarded as essentially normal in all cases. If fatty changes were present, the condition had not advanced to a state where it was obvious in hematoxylin-eosin sections. In the other tissues, there were no changes which could be attributed to damage resulting from gastrointestinal parasitism. However, it should be noted that the changes described in the livers and kidneys are from selected cases, and represent terminal conditions in moribund and dead sheep.

CONDITIONS INFLUENCING THE DEVELOPMENT OF PARASITISM

Inadequate Nutrition. — With artificial exposure to infective larvae, Fraser *et al.*[2] found poorly nourished lambs to be more susceptible to infection with *H. contortus* and Ostertagia spp. Worms recovered at autopsy from 20 lambs in the well-fed group fifteen days after exposure averaged 2 Haemonchus and 11 Ostertagia. In the same number of poorly fed lambs, the average number of worms per lamb was 81 and 229, respectively. In a grazing experiment, Fraser and Robertson[3] found poorly fed parasite-free lambs to acquire over three times more *H. contortus* than well-fed lambs. In a group of five lambs with heavy experimental infection of *Trichostrongylus colubriformis*, Andrews *et al.*[4] found that the feed necessary to produce a gain of 100 pounds was twice that for a control lamb. One of the infected lambs suffering from severe diarrhea showed a decrease in the digestibility coefficients of all components of the feed except crude fiber and ether extract. In one lamb, there was a loss of calcium and phosphorus from the skeleton.

With metabolism experiments on parasitized sheep, Stewart[5, 6] found that the digestibility of protein was lowered. The digestibility of ether extract and nitrogen-free extract was unaffected, while that of crude fiber was lowered by very heavy infections. An extract was prepared from nematodes, mostly *H. contortus*, which inhibited the action of proteolytic enzymes.

Shearer and Stewart,[7] in further investigation on metabolism of parasitized sheep, found an interference with the utilization of calcium and phosphorus, and concluded that the skeletal growth would be retarded in young, heavily parasitized animals.

In a review of work on natural resistance to helminth infections, Ackert[8] cites numerous works showing that the resistance of omnivorous animals is lowered by diets which are deficient in vitamins A, D, and B complex. Also, rations with highly restricted sources of protein (of vegetable origin) lowered resistance.

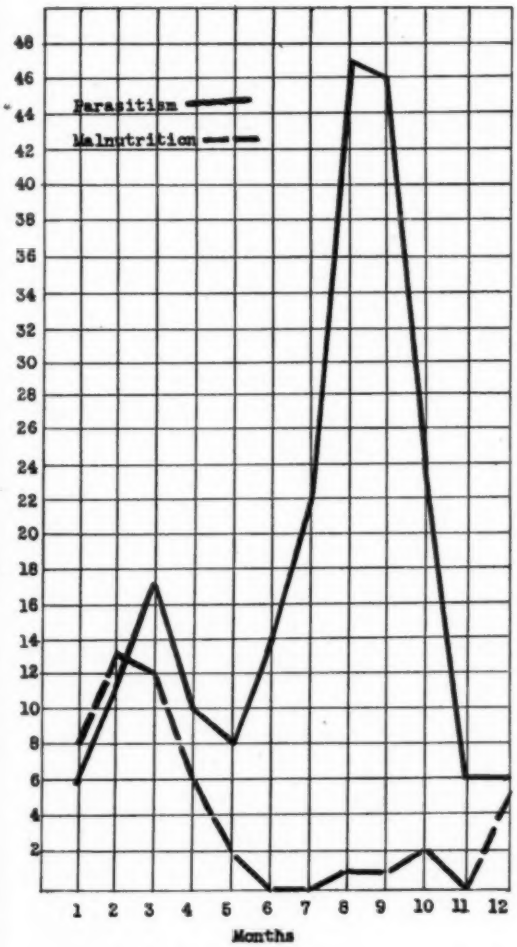

Chart 1—The monthly incidence of cases of parasitism and malnutrition.

Elder[9] states that proper feed in abundant amounts is very essential, and that proper feeding compares in importance with specific treatment in the control of internal parasites.

Taylor[10] reports a comparison of the nutritional level of lambs on their susceptibility to trichostrongyloid infection. One group received a full ration of hay and concentrates, the second a ration of hay only, and the third a ration of straw. These lambs received trichostrongyloid larvae at the same rate. Upon autopsy, the lambs on the full ration carried approximately 3,000 worms each, those on hay some 9,000 worms each, and those on the straw 14,000 worms per lamb.

Whitlock, *et al.*[11] report that lambs pastured with heavily parasitized ewes failed to become infected (as determined by dilution egg counts) on early summer pasture, but parasitism became severe in the flock in early August. Of 30 ewes removed from the pasture and fed alfalfa hay and yellow corn, 11 showed self cures, and almost all reduced their worm burden. The early spring pasture, and the alfalfa and corn regimen is credited with providing a state of nutrition favoring resistance to the parasites. Vitamin A was suggested as the possible favorable nutritional factor in this case.

Young calves on an exclusive milk diet were found by Porter[12] to be less susceptible to infection with *H. contortus* than calves on a diet of milk, grain, and alfalfa hay. Worms failed to develop in one milk-fed calf 2 months of age that received 10,500 larvae. When worms were recovered from milk-fed calves they were smaller in size. The resistance of milk-fed calves to worm infection was credited to an unfavorable environment in the abomasum.

From the experimental work on the relation of nutrition to internal parasitism, it is evident that good feeding plays a considerable rôle in maintaining the resistance of the host to parasitic infection. This resistance is relative to the adequacy of nutrition and also to the intensity of infection. Even under conditions of optimum nutrition, sheep will be killed by extremely heavy infection with internal parasites. This is particularly true in lambs. Lambs, in finished condition, that are on excellent bluegrass and clover pasture, sucking their mothers, and creep fed on grain, are occasionally found to be dying from acute haemonchosis. These cases

occur when the larvae population on pastures is extremely high.

Observations at this experiment station indicate that a good state of nutrition in sheep and lambs is a major factor in reducing loses from internal parasites. The postmortem records show that the higher incidence of parasitism corresponds closely with the periods in which sheep are on poor pastures or are receiving poor feed. The large number of parasitism cases occurring in midsummer and early fall (chart 1) represents sheep and lambs which have been held on permanent pastures since early spring. In nearly all instances, the pastures are overstocked and the grass is too short to provide an adequate amount of forage. Added to this innutrition is the lower quality of pasture forage due to drying up of the bluegrass and white clover which comprise most of the permanent pasture in this area. A pasture which is burned dry during July and August cannot be expected to furnish vitamin A. The protein content of the dry grass is also low. It will be noted that malnutrition has been diagnosed during August, September, and October. Frankly, these are cases of starvation.

The parasitism observed during February, March, and early April (chart 1) is associated with several contributing factors. Probably the most important is inadequate nutrition. Our records (chart 1) show numerous instances of malnutrition occurring from December through March. There is a concurrent rise in the number of cases of parasitism which, in general, corresponds to the increased incidence of malnutrition. It is our opinion that the parasites found in these ewes consist principally of infection carried over from the previous summer and autumn and that these losses are due to a combination of malnutrition and parasitism. Usually the ewes have been carried through the winter on poor quality roughage and without a grain supplement. Frequently, feed is not given in sufficient quantity even though it is available and of fair to good quality. Consequently, the ewes' reserves of vitamins, minerals, and energy stores are low or marginal, and the added demands of pregnancy and lactation accentuate the nutritive deficit. The net result is depleted ewes with lowered resistance to internal parasites. In these ewes, the clinical appearance is one of starvation rather than of any particular deficiency.

Physical factors favoring the development of parasitism during this period are the continuous concentration of sheep in their winter quarters and the moderate, moist weather which occurs in the early spring months.

Winter Carry-Over. — Sarles[13] in Maryland, Gordon[14] in Australia, and Swales[15] in Canada report experiments in which nodular worm contamination on pasture did not survive over winter. Shorb[16] in Maryland found that the common stomach worm eggs and pre-infective larvae were destroyed when placed on grass plots between December and March. Examination was made at the end of April. The shortest period of exposure was fifty-four days, but he states that infective *H. contortus* larvae may survive the winter. In another report, Shorb[17] found no development of common nematode eggs during winter, but Ostertagia spp. and Nematodirus spp. survived and became infective in late spring. Baker[18] reports that common nematodes, including the nodular worm and stomach worm, remained viable, and infected lambs after a period of twenty-one months on a New York pasture. On a Maryland pasture, Dikmans and Andrews[19] found that *Nematodirus spathiger, Ostertagia circumcincta,* and *H. contortus* survived the winter and infected lambs. Griffith[20] found that *Moniezia expansa, O. circumcincta,* and *T. colubriformis* survived the winter on Canadian pasture.

From the variation in these reports on the viability of eggs and larvae, it is evident that pastures cannot be considered clean after being idle for four to six months during the winter season. However, it does appear that pasture contamination is considerably reduced during winter and that the contamination is replenished during the spring months, reaching considerable intensity in midsummer. Such a condition is in general agreement with the seasonal incidence of parasitism in that losses are small during April, May, and early June. It is felt that adult parasites carried through the winter in the ewes are responsible for the greater part of the pasture contamination, which is continuously intensified until losses of lambs occur in midsummer.

Permanent Pastures. — The continuous

use of permanent pastures provides the parasites with an opportunity for progressing with no breaks in their life cycle except unfavorable weather conditions and anthelmintic treatment. Apparently, neither of these are sufficient for preventing heavy infection with internal parasites on the usual farm having a permanent pasture system. Under Kentucky conditions, death losses from parasitism are highest during July, August, September, and October. These losses are primarily due to two conditions: First, because of continuous grazing the pasture area becomes progressively more contaminated with infective larvae; second, the pasture area becomes short, and forces the sheep to graze close to the ground. Both of these conditions favor an increased intake of worm larvae by the grazing animal so that the sheep progressively acquires a greater load of parasites. In addition to the parasitic damage, the animals are usually on a lower plane of nutrition. Midsummer pastures frequently do not provide adequate forage and there are many cases that are frankly undernourished.

Overstocking. — Sheepman frequently increase the size of their flocks beyond the capacity of their farm for handling sheep. This overstocking is a fundamental source of much of the disease problem. Overcrowding tends to accentuate the development of parasitism by forcing closer contact between the sheep and its own excrement. Frequently, pasture on overstocked farms does not provide enough forage for adequate nutrition. Moreover, an insufficient production of hay and grain crops results in limited feeding when pasture is not available. Overcrowding in housing may contribute to the unthriftiness of sheep and predispose to respiratory trouble with consequent increased susceptibility to animal parasites. Providing adequate living space is an essential part of any parasite-control program. Animal population should be kept in balance with pasture acreage and productivity, the capacity for producing or securing dry feeds, the housing space, feeding equipment, and other facilities.

Late Lambs.—Lambs are especially subjected to the ravages of internal parasites in midsummer and early autumn. The preferred practice is to have lambs dropped early so that they reach market age by the end of June or early in July. Such a practice permits lambs to graze on good spring pasture which has lost much of its ova and larvae contamination by exposure to winter weather, and it avoids the hot weather, short pastures, and heavy infection occurring during midsummer. If the owner cannot provide facilities for producing early lambs, a clean, supplementary pasture should be available for the midsummer grazing period. The not uncommon mistake of weaning lambs on the old pasture and moving ewes to a new area should be avoided.

Water Supply.—Farm ponds, sink holes, creeks, and springs are the usual source of water on Kentucky farms. Efforts to protect these water sources from fecal contamination are made in very few instances, and the water is usually stagnant and grossly contaminated. These sources of water tend to cause congregation of animals in low areas of pasture, and thus create an area of heavily contaminated pasture in which the animals spend considerable time.

Improper Medication.—One common reason for losses, especially of lambs, is the failure of sheepmen to appreciate the desirability of periodic, anthelmintic treatment throughout the grazing season. This is particularly the case on farms where the sheep are grazed throughout the season on one pasture area. The most frequent error is failure to continue treatment through July, August, and September. Our case histories frequently show that the flock has been treated in May or early June without further treatment until deaths occur in July and August. The fundamental reason for these mistakes is that the owner has been over-sold on medication, and has not been made to realize the potential for reinfection that exists on pastures under continual use.

Both ewes and lambs should be treated. Even though ewes may not show evidence of parasitism, they usually are carrying worms and are adding to the pasture contamination. A fasting period of eighteen to twenty-four hours is required for copper sulfate-nicotine sulfate, but is less important with phenothiazine. The ewes should not have feed or water for three hours after drenching with copper sulfate-

nicotine sulfate. Lambs should not suckle ewes for 3 hours before copper sulfate-nicotine sulfate treatment, and should remain separated from them until two hours after treating. Copper sulfate solution *should not* be placed in the rumen with a stomach tube. The periodicity of summer medication should not exceed thirty days, and under conditions where parasitism is very severe may be advantageously reduced to fifteen- or twenty-day intervals.

CONTROL MEASURES

Nutrition.—That a good state of nutrition favors resistance of sheep to internal parasites is indicated by both experimental and clinical observation. Feeds for sheep are most conveniently supplied by pasture. Good permanent pasture supplemented by temporary pasture during midsummer should supply the nutritive demands of ewes and lambs during the grazing season. Temporary pasture crops may be used in the early spring to supplement the permanent pasture. Crops such as wheat and barley may be used to provide succulent grazing in the fall and early spring. The animal population should be kept in balance with the productivity of the pasture so that adequate forage is available. It is important to remember that on improved, heavily stocked pastures, the rotation system and medication schedule must be more stringent to keep down parasitic infection.

Determining the time to feed hay should not be judged by the first snow or by other empiric custom. The hay feeding period should be governed by the condition of the ewes, the amount of suitable forage on pastures and other areas which may be grazed, and the weather conditions. Legume hay is very desirable and should be fed at the rate of 2 to 3 lb. a day. The remainder of the roughage may be secured by grazing or feeding corn stover, corn silage, or other suitable roughage. When good quality legume hay is not available, it is necessary to provide protein and mineral supplements if optimum results are desired.

Grain feeding should begin four to six weeks before lambing. Ewes in good condition do well with a short, grain-feeding period. Thin ewes need grain over a longer period. Ewes in average condition should gain 20 to 30 lb. during the pregnancy period, and about half of this gain should be made during the last third of gestation. It is desirable to have about half of the grain ration made up of yellow corn for its vitamin A content. Simple grain mixtures should be satisfactory if plenty of good quality alfalfa or clover hay is being used. Protein concentrates must be added when nonleguminous roughages are used. One half lb. of grain mixture daily is usually sufficient for ewes in ordinary condition. Thin ewes need more. After lambing, the grain allowance should be increased so that each ewe receives 1 to 1 1/2 lb. daily. Common salt and fresh water should be available at all times. Detailed information on feeds, feeding schedules, and rations may be secured from the state agricultural colleges.

Pasture Rotation.—Rotation of pastures and animals should serve a double purpose, reducing the infection of sheep by internal parasites and improving the quantity and quality of forage for the grazing animals. A plan for pasture and animal rotation is an individual, farm problem. Blanket recommendations usually fail because they cannot be applied (to the letter) to every farm. To effectively plan a rotation system, one must be familiar with parasite life cycles and with the bionomics of free-living stages. Peculiarities of particular farms and management practice should be known, as these may favor the development and transmission of parasites. Soil fertility, soil types, topography, drainage, water supply, kind of vegetation, fencing, and shade and housing must be considered. The rotation system need not eliminate every parasite egg or larva. It may be considered effective if the ingestion of eggs and larvae is sufficiently limited to permit a profitable sheep enterprise.

On overstocked farms where management practices are good, a reduction in the number of sheep will often materially ameliorate the parasite problem. The reduction of animal numbers increases the amount of feed available per animal and reduces the concentration of parasite eggs and larvae on pastures. Increasing pasture acreage helps accomplish the same purpose.

For those farms on which there are no physical facilities for rotation or desire on the part of the operator for improving conditions, a part-time, sheep enterprise is probably best. Such a plan should give the entire farm a vacation from sheep for two years. Then good northwestern ewes can be bought in the summer and early fall, placed on a cultivated field, treated with phenothiazine, and four days later moved

to the pasture. After 4 or 5 lamb crops have been raised the entire flock should be sold and the farm permitted to be free from sheep for another two years.

Shorb[17] (Maryland) reports that parasite-free lambs failed to acquire infection from two weeks grazing on pasture lots which had been idle for 2 1/2, 3 and 3 1/2 months after infected ewes were removed. The idle period was during summer. The ewes used to contaminate the lots were passing eggs of all the common, sheep nematodes. Only the whipworm (surviving 3 1/2 months) was found in the lambs. In another experiment Shorb[16] gives data showing an extensive destruction of *H. contortus* larvae during an eighteen-day period in summer. Taylor[21] (England) was unable to find living strongyloid larvae after 133 days in grass box experiments. Kauzal[22] (Australia) gives data in graphic form showing that less than 20 per cent of an original infection of *H. contortus* larvae remained alive on grass and in the soil after seven weeks.

The foregoing data indicate that there is a rapid destruction of both eggs and larvae under summer conditions. Although eggs and larvae may not be completely eliminated by a rest period of three months during midsummer, such a plan should be valuable for reducing contamination of the permanent pastures. Ewes and lambs are off the permanent pasture when the incidence of parasitism is greatest, and can be returned in the fall after most of the pasture contamination has been eliminated. The use of a good temporary pasture during midsummer will provide better nutrition, avoid the heavily contaminated, permanent pasture, and permit the flock to be returned to a relatively clean area in the fall.

For farms on which sheep are to be maintained continuously, at least two areas of permanent pasture are desirable. If the crop rotation is arranged so that a temporary pasture crop is available during midsummer, a pasture rotation plan can be followed which will give lambs considerable protection. Lambs usually do not acquire significant numbers of parasites until they have been on pasture for four to six weeks. Under Kentucky conditions, this time would usually be about the last two weeks of May. Thus, a change from one permanent pasture at this period should measurably reduce the intake of worm larvae. The temporary pasture, as Korean lespedeza, should be ready for the flock in July and provide forage until October. One of the permanent pastures should remain free from sheep during the fall and winter to permit it to clean up for early spring grazing.

Some herdsmen do well with two pastures by alternating them in a one-year rotation. Others use a three-pasture system allowing each pasture a two-year vacation from sheep.

Medication. — Anthelmintic treatment may be used in various ways for the control of sheep parasites. The common practice is to treat periodically during the grazing season. The individual treatments are spaced at intervals of twenty to thirty days. The success of this plan depends largely on the feed that is available and the amount of pasture contamination. If the state of nutrition is good and reinfection is not too severe, lambs can be sufficiently protected by periodic medication so that they will grow and fatten rapidly. However, there are many farms on which conditions are so unfavorable that periodic medication does well to prevent death losses of lambs.

A mixture of phenothiazine and salt has been favorably reported for control of parasites during the grazing season. The ratio of phenothiazine to salt has varied from 1 in 10 to 1 in 15. This mixture is kept before the flock continuously, and appeals to farmers because of the ease of administration. The use of phenothiazine in salt should be supplementary to a schedule of individual treatments during the winter and early spring. The flock should be made as free from nematode parasites as is possible by anthelmintic treatment before being placed on pasture with a phenothiazine-in-salt mixture.

In terms of parasite control, anthelmintics produce the best results when used in conjunction with other measures for breaking the life cycle and preventing reinfection. In such a program, medication serves to interrupt the parasitic stage of the life cycle. This means that flock treatment should be given at times when weather conditions and pasture rotation prevent reinfection and favor elimination of the free-living stages of parasites.

Since winter weather conditions appear to destroy most of pasture contamination, it is important to have a schedule of medi-

cation that will eliminate the carry-over of adult parasites in the breeding ewes. A program for control of nodular worms by winter medication will also serve very well for other nematodes against which phenothiazine is effective.

Under Kentucky conditions, the flock should be treated with phenothiazine about the second week of November and again near the end of December. The second treatment is given to remove those nodular worms that have migrated from the intestinal wall since treating in November. If only one treatment is used it should be given in December. On those farms where ewes are bred to lamb early in January, it may be advisable to move the date of the second treatment back into the early part of December.

We have had field reports of abortion following the administration of phenothiazine to ewes late in pregnancy. However, there was no proof that the abortion was directly due to the phenothiazine. To complete the winter medication program, the ewes should have individual treatment with phenothiazine before being turned on pasture in the spring. In Kentucky, this time will be in late March or early April.

SUMMARY

It is evident from our study on the pathology of parasitized ewes and lambs that many of them reach a condition from which recovery is impossible. Many more are so debilitated that there is little hope of restoring them into profitable animals by curative medication. Therefore, the control of internal parasitism must be accomplished by a preventive program. In such a program, the three principal measures to be used are adequate nutrition, anthelmintic treatment, and pasture rotation. Parasite control will be more efficient when all of these measures are employed. Their separate and corporate use have been discussed. In addition, there are numerous factors of management practice, and physical conditions which favor the development and transmission of parasites. These should be considered, and if possible they should be corrected.

The measures for parasite control should be incorporated into a general program for disease prevention. Preventable conditions, other than parasitic infection, account for more cases in our postmortem records than those which are diagnosed as parasitism. The more important of these are malnutrition, pregnancy disease, sporadic pneumonia, navel infection, lamb dysentery, foot rot, overfeeding, tympanites, tetanus, and poisoning. Again, the control measures consist of good management practice, adequate feeding, housing, and reasonable sanitary precautions.

Finally, one should guard against overenthusiasm for anthelmintic medication. The anthelmintics must be used to augment rather than replace sanitation, rotation, and good management. Although phenothiazine is remarkably effective against many of the nematode parasites of sheep, it will not remove tapeworms, coccidia, lungworms, and flukes. In addition, there are intestinal nematodes against which phenothiazine is not effective. These latter parasites must be controlled largely by sanitary precautions and preventive measures.

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Dispensing in Veterinary Practice

Whether a druggist should refuse to fill the prescriptions which the dispensing physicians cannot handle is discussed in a recent issue of *American Druggist*. The way suggested for making the dispensing doctor capitulate is to refuse to fill any of his prescriptions as an Iowa druggist is reported to have done.

This wrist slapping between doctor and druggist is no affair of the veterinary profession, but it does raise the question of dispensing in veterinary practice. Since primitive days, the pharmacy has been as much a part of the veterinarian's outfit as the casting harness and medicine kit and probably as important in animal production as the silo, with ne'er a trend toward abolishing it in favor of the unworkable scheme of prescription writing—an art well taught in the earliest veterinary colleges. The reasons for discarding prescription writing are too numerous and too obvious to mention here. The pharmacy in veterinary practice is of intramural origin and operation from necessity. In the drug trade *per se* (and this is told from experience and observation), America's gigantic livestock industry was as unknown as the social life of southern Patagonia, and about that interesting until exclusively veterinary supply houses were created. They built up a big industry essential to the country's welfare. This is history, not reproach. "Come on in, the water is fine" about explains the *status quo*. But listen! Why not treat the veterinary profession with the same sort of respect as the medical? It may pay in the long run. The kind of veterinary medicine the country needs is worth thinking about. If the drug trade and the veterinary profession should keep riding in opposite directions, they will lose contact again, or the former will horn in only while farmers are prosperous.

Opportunity for Veterinarian in Panama

The owner of a large dairy in Panama wants a well-qualified veterinarian or animal husbandman, who has had not less than 10 years experience in milk production and animal husbandry, to take charge of the dairy herd. The applicant should also have a speaking knowledge of Spanish. In addition to the salary, all travel expense will be paid by the company, individual family living quarters and certain food will be furnished, and a bonus for increased production of the herd will be paid.

Any veterinarian who is interested may write to Dr. H. Schmidt, Chief, Division of Veterinary Science, Texas Agricultural Experiment Station, College Station, Texas.

Vegetable Proteins for Turkeys

In a test involving 640 turkeys and lasting twenty-eight weeks, workers of the Bureau of Animal Industry, USDA, found that vegetable-protein diets produced as large turkeys as those fed a control diet containing skim milk, meat scraps, and fish meal. Soybean meal, peanut meal, and ground wheat were the main diets tested. Moreover, the tests showed that the cost was less.

In round numbers, every 10 adults must furnish the needs of one man under arms. The sale of War Bonds is the practical means set up to accomplish that end.

The Production of Parturient Hemoglobinemia by Low Phosphorus Intake

D. E. MADSEN, D.V.M., M.S., and H. M. NIELSEN, M.S.
Logan, Utah.

IN PREVIOUS papers, the authors presented evidence that parturient hemoglobinemia of dairy cows was associated with rations low in phosphorus.[1, 2] The low inorganic phosphorus content of the blood plasma of affected cows and of apparently healthy cows in herds where the disease is common, led to the above conclusion. To check further these conclusions, it was thought desirable to determine if the disease could be produced experimentally by placing cows on a phosphorus deficient ration.

METHODS AND MATERIAL

Although it was originally planned to use several cows in this experiment, it became necessary to remove 3 cows from the experiment, early in the study because of disease. The one cow (E147) finally used was a good milk producer. This was considered important since nearly all cases of parturient hemoglobinemia developed in the field are heavy milk producers. The cow was selected from the herd of the Utah Agricultural Experiment Station dairy farm and was maintained at that farm during the course of the experiment. She was in a good state of nutrition when placed on test.

Cow E147 was 3 years of age. She had given birth to one calf and was placed on the experimental ration nine months after calving. During the postparturient period, blood samples and clinical observations were usually made at two- or three-day intervals. At other periods, samples were collected at one- to three-month intervals.

Phosphorus analysis of blood samples collected was begun within a few hours after collection. Erythrocyte fragility tests were made by Sanford's method.[3] The specific gravity was determined by weighing a sample of serum in a pycnometer.

The experimental ration fed consisted of dried sugar beet pulp and all the bright green alfalfa hay she would eat. The phosphorus content of the alfalfa hay varied between 0.15 and 0.21 per cent. The dried beet pulp contained 0.068 per cent phosphorus. (For production record, *see* table 1.)

Symptoms.—After cow E147 had been on the experimental ration two years and eight months and had passed through three pregnancies, the following symptoms developed: On June 22, after the last parturition on June 7, 1943, the milk production began to drop and on the same date there was slight inappetence. On June 26, the caretaker observed that the urine was reddish. On June 28 the cow was gaunt and weak, and walked with a tottery gait, the eyes were sunken and the ears drooped. Temperature was 103 F.; pulse 120; heart "pounding," (audible at some distance); respiration rapid; frequent straining; rectum distended with feces of normal consistency but contained increased bile pigment; right ovary exhibited a cyst about 6 cm. in diameter; exposed mucous membranes were anemic and icteric; teats were pale; the urine was the color of black coffee and very foamy owing to the albumen it contained; blood plasma red from hemoglobin. There was little change in the symptoms the following day (June 29) except that the pulse had dropped to 80, the heart was no longer "pounding" so violently, and the plasma was free from hemoglobin. On June 30, the pulse was 80, temperature 102 F., appetite was improved, straining had ceased and there was no hemoglobinuria. Thereafter improvement was gradual. In five weeks, 60 per cent of the erythrocytes lost had been replaced. This animal did not show a higher leucocyte count than 9,000 per cmm. during the illness. The symptoms during the critical stage were sufficiently intense to warrant an unfavorable prognosis.

This cow showed obvious symptoms of aphosphorosis during the last eighteen months of this study as indicated by inappetence, stiff gait, creaking joints, rough coat, poor condition, and chewing of for-

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Contribution from the Department of Veterinary Science, Utah Agricultural Experiment Station, approved for publication Dec. 1, 1943.

Research professor, Department of Veterinary Science, Utah Agricultural Experiment Station (Madsen), research assistant (Nielsen).

Acknowledgment is made by the authors of the suggestions and the assistance of Mr. George Q. Bateman, agent, U. S. Bureau of Dairy Industry, and Mr. J. E. Packer of the Utah Experimental Dairy Farm. The cows and physical plant provided by them made this study possible.

eign objects. The calves born were normal and thrifty.

EXPERIMENTAL

The erythrocyte count, the inorganic plasma phosphorus, and the erythrocyte fragility are shown in figure 1. There is no special significance attached to the erythrocyte count other than the sudden destruction of these cells when sickness developed. This reached the low point of 2.16 million on June 30. The inorganic plasma phosphorus showed the seasonal-lactation type of curve characteristic of high producing cows. Since the ration was deficient in phosphorus, the fluctuation was greater than would be the case in properly nourished cows. The lowest inorganic phosphorus recorded was 1.43 mg. per 100 cc. of plasma. This point was reached on June 28 (about the height of the symptoms). Earlier studies[1] have shown that the lowest level of plasma inorganic phosphorus recorded in affected cows is that obtained early in the course of the disease, one case showing as little as 0.22 mg. per 100 cc. of plasma. Unfortunately, in this experiment, blood samples were not collected until two days following the first appearance of hemoglobinuria. It seems likely that the plasma phosphorus level had been lower earlier in the attack. It is known that many cows exhibiting normal erythrocyte count have shown values lower than 1.43 mg. On June 18, the phosphorus level was 1.65 mg. per 100 cc. The sudden increase of plasma phosphorus (fig. 1) immediately following clinical symptoms was the result of the administration of bonemeal. On June 28, 4:30 p. m., the cow was drenched with 200 Gm. of bonemeal. Five

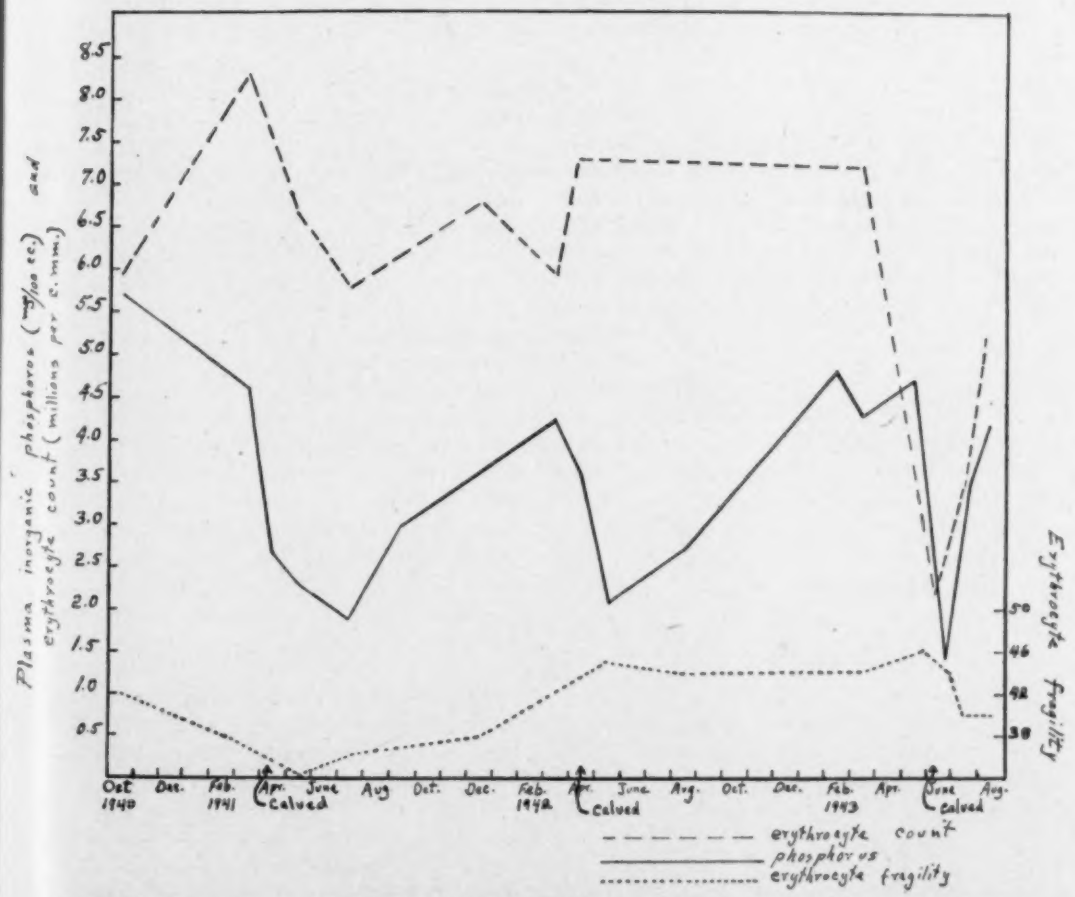

Fig. 1—Erythrocyte count, plasma phosphorus and erythrocyte fragility determination on cow, E147, during period of study.

and one-half hours later the plasma phosphorus had risen from 1.43 mg. per 100 cc. to 3.00 mg. per 100 cc. Thereafter, drenching with bonemeal twice daily (100 Gm. per dose) was the only treatment administered. This was continued for a total of three days. The dried beet pulp ration was immediately replaced with a grain mixture and the cow placed on pasture. Following this change, the plasma phosphorus remained at an uniformly high level. The above treatment was similar to that recommended by the authors for field cases.[2]

The serum calcium level was within normal range and showed no tendency to seasonal variation.

As expected, the total nitrogen content of the plasma was increased during the acute illness, the increase no doubt arising, at least in part, from the hemoglobin present. Serum specific gravity determinations were made with the idea in mind that they would measure, to some degree, the osmotic pressure of the environment of the red blood cells. On June 28, soon after the attack, the specific gravity reached the low point of 1.0242. It is conceivable that some time between June 18 and June 28, the serum specific gravity reached still lower levels. This is of interest because a sudden change in the osmotic pressure could cause the erythrocytes to rupture. A low serum specific gravity reading was also exhibited twenty-seven days following parturition in 1941. Further studies are in progress to determine if serum specific gravity changes commonly occur during the postparturient period in healthy cows properly fed. This question needs further study.

The erythrocyte volume did not drop as much as the erythrocyte count. This corroborates the microscopic finding that the cells are swollen during the attack. The immature cells present in great numbers during the convalescent period are also large, this being reflected in the cell volume—cell count ratio.

The determination of erythrocyte fragility was based on various concentrations of NaCl solution and the observance of the point at which complete hemolysis of a drop of blood occurred. This is subject to some variation especially when working with partially hemolyzed blood. However, the readings in figure 1 show an increased fragility during the 1942-1943 period and a tendency to an especially fragile period shortly following parturition. The possibility of such changes being characteristic of normally managed cows is being investigated.

TABLE I—Milk Production and Feed Consumption Records for Cow E147

Lactation Period	Production		Concentrates Consumed	
	Milk (lb.)	Butterfat (lb.)	Barley (lb.)	Dried Pulp (lb.)
1st (330 days)*	11,131.2	409.2	2536	436
Dry (48 days)				384
2nd (305 days)	9,610.2	360.1	1047	1074
Dry (55 days)				220
3rd (316 days)	9,536.6	358.5	114	1425
Dry (98 days)				916

*Only the last 120 days of this lactation period were experimental ration.

Discussion and Conclusions

A case of parturient hemoglobinemia with all of the characteristic syndrome was produced by feeding a high producing dairy cow a ration made up largely of alfalfa hay and dried beet pulp. It seems likely that with the exception of phosphorus this ration contained all of the substances necessary for fetal growth and milk production. The fact that no clinical case of this disease occurred in some 60 head of milking cows owned by the Utah State Agricultural College during the past two decades is evidence that the case studied was induced experimentally. Field studies[2] have shown this disease to be associated with aphosphorosis. Stevens,[4] a practicing veterinarian at Lewiston, Utah, reports that where as he formerly met 25 cases of the disease yearly he later saw only two cases yearly. He attributes the decrease to the more general use of bonemeal. As bonemeal was difficult to obtain in 1943, there was an immediate increase in case incidence.

While all of the factors in connection with the etiology of this disease are not known, this experiment seems to show with reasonable certainty that the characteristic hypophosphatemia was the result of low phosphorus intake and was in some unexplained manner responsible for the erythrocyte destruction.

During the fourth lactation period, milk production averaged 63.9 lb. daily (5.1 per cent butterfat) for first nine days of usable milk. During next ten days, production

dropped to 30 lb. daily. The daily ration was alfalfa hay; dried pulp, 8 lb.; and barley, 2 lbs. During the earlier period, corn silage and pasture were provided, and bright green alfalfa was fed ad libitum throughout the experiment.

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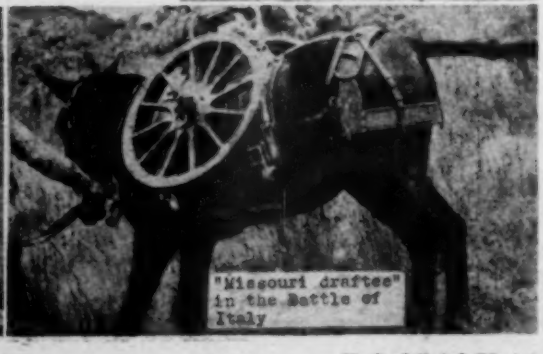
Pig Anemia

In spite of widely disseminated information on the prevention of pig anemia, this disease continues to cause losses among baby pigs that are farrowed during the late fall, winter, and early spring months. It occurs in pigs that are approximately 2 to 7 weeks of age. Pigs affected with anemia are a poor risk for immunization against hog cholera. Probably the simplest method of prevention is that recommended by the Purdue station, which consists of allowing the pigs free access to several shovelfuls of sod placed in a pen or a box. The sod should be taken from areas that are free from worm eggs. Even greater protection against anemia is assured if the soil is enriched with the following solution: iron (ferrous sulfate), 1.0 pound; copper sulfate, 2.5 ounces; water, 3.0 quarts. This solution can also be applied to the udder with a swab or brush if the "soil method" is not used. The "swab method" has been used successfully in the swine herd belonging to the University of Illinois.—*Animal Pathology Exchange, University of Illinois.*

Penicillin has been found to have important action against Weil's disease (leptospirosis) in experimentally infected guinea pigs. Of 32 infected animals, none of the treated animals died, while the infection was fatal in 29 out of the same number of controls.—*From Science News Letter.*

Some War Animals of 1944

In World War II, as in all wars of history, animals are found to be essential to the successful operations against stubborn enemy resistance.



—*U. S. Official Photos*

Control of Bovine Mastitis Involving the Supernumerary Teats and Glands: A Case Report

W. G. ANDBERG, B.S., D.V.M., and F. J. WEIRETHER, B.S.
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IN ADDITION to the four teats and mammary glands, there may be a variable number of additional teats. Some are orifices of small glands, some may be without glands, yet others may open into one of the four quarters or into a separate quarter. Various authors have estimated the number of supernumeraries among cattle and these estimates run between 15 and 69 per cent. MacKenzie and Marshall[1] estimated that over 50 per cent of the cows in England probably possess accessory or supernumerary teats, the number of which varies from 1 to 3. In many cases, these teats were associated with additional glands which were frequently functional and secreted milk. Ordinarily, this milk is absorbed into the circulation, the lactrose being excreted in the urine where its presence can be determined by chemical methods. In some countries, particularly in parts of Holland, it is the custom to remove the extra teats from the calves. Apparently however, the glands, were not removed as sometimes these were seen or felt as slightly distended portions of the udder which occasionally showed evidence of an inflammatory condition. They further state that in England it is not the custom to remove additional teats, but they are not milked and are commonly regarded as being functionless. Turner[2] says that the position of supernumerary teats is of three types: those found at the rear of normal teats (most frequent), those found between the normal teats, and those found attached to or branching from the normal teats. Studies have shown that the frequency of supernumerary teats on the right and left sides is almost equal. They may be removed successfully by veterinarians with an emasculator. Gold[3] states that small accessory teats (polythelia) occur in about 33 per cent of dairy cattle. He also describes the surgical procedure in removing these teats. Dixon,[4] commenting on Gold's technique, considers general anesthesia as dangerous in advanced pregnancy. In local anesthesia, he has had success by putting the needle up the teat canal and then pushing it into the mucous membrane to deposit the anesthetic. With this method, good anesthesia results.

In the control of mastitis, especially by therapy, supernumerary teats and glands, when of sufficient size, contain enough secretion to become a source of infection. When making an examination of milk, all teats should be tried for samples of secretion. To illustrate this point, in a small herd of Guernsey cattle, 3 cows had supernumeraries posterior to the hind quarters. Two cows had 2 such teats and glands while the third cow possessed only 1. Abnormal milk was removed from each teat in quantities up to 10 cc. *Streptococcus agalactiae* (typed biochemically) was present in all 5 supernumerary teats as well as in all 4 quarters. Treatment in these cases was carried out successfully by injecting 5 to 8 cc. of Novoxil liquid* into the supernumerary teat. Similar success has been obtained by some practitioners in the field. An extreme case of a supernumerary teat and gland is illustrated by another Guern-

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*The Novoxil used was supplied by E. R. Squibb and Sons.

sey cow. Upon examination, the right hind quarter was hard and swollen on its posterior aspect. Upon closer examination, two separate full-sized, right hind teats in close approximation were present. A thick, abnormal secretion containing milk plugs was withdrawn from the supernumerary gland, while the right hind quarter gave a normal-appearing secretion. Palpation revealed this quarter as not being affected. The herdsman had complained about intermittent abnormal milk coming from only the right hind quarter. Due to the close proximity of these 2 teats, it was easy to milk 1 or both with the milking machine which accounted for the abnormal milk. An attempt was made to treat this gland; it harbored staphylococci. However, owing to other complications the cow was slaughtered.

SUMMARY

As few cases of infected supernumerary teats and glands are reported, they are thought worthy of mention to those interested in mastitis control. In most instances, treatment is simple and effective and it removes one source of spreading. From a practical standpoint, supernumerary teats should be removed early in life when the operation is a minor one. When present in adults, they may constitute a source of infection that should not be overlooked in the control of mastitis.

ADDENDUM

After completion of this manuscript, our attention was called to a recent paper by O. W. Schalm (Schalm, O. W.: Treatment of Chronic Mastitis During the Dry Period. J.A.V.M.A.; *104*, (Feb., 1944): 78-83) which stresses the importance of treating supernumerary teats to prevent reinfection.

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Invade with War Bonds

Urethral Obstruction in Male Foals

The following letter was written to Dr. Charles Haasjes, Shelby, Mich. by an officer of the Veterinary Corps on duty in New Guinea:

Your recent report* in the January (1944) issue of the JOURNAL recalls a similar case I saw four years ago while visiting Dr. E. C. Ritter, Sumner, Ia., who was called to see a chestnut male foal 24 hours old showing the classical symptoms of dysuria. Since it was hardly conceivable that a foal of that age would have a urethral calculus, he first ascertained that the lower bowels were normal. A small animal bougie was passed up the urethra about six inches where it was stopped by an obstruction. A foreign body which could be palpated at that spot was "milked" by manipulating the penis. The area affected was about two inches below the ischial arch. The foreign body was of soft, waxy consistency and about the size of an agate marble. It appeared to be composed of the identical material found in the sebum between mares' teats and on the prepuce of geldings.

Immediately after removal the foal urinated, rose to its feet, and began to nurse. There was no relapse. There was no evidence of organic disease in either the dam or foal.

What puzzled us was (1) the presence of foreign body in a foal of that age, (2) the fact that while the foal strained hard to urinate there was no leak through the urachus, and (3) there was nothing abnormal elsewhere.

Dr. Ritter, who is now on duty in China, and I had often discussed this case as we had never seen or heard of a similar one. We would be happy to know of any conclusion you may have drawn from your case.
March 21, 1944. S/IKE HAYES, Capt.V.C.,A.U.S.

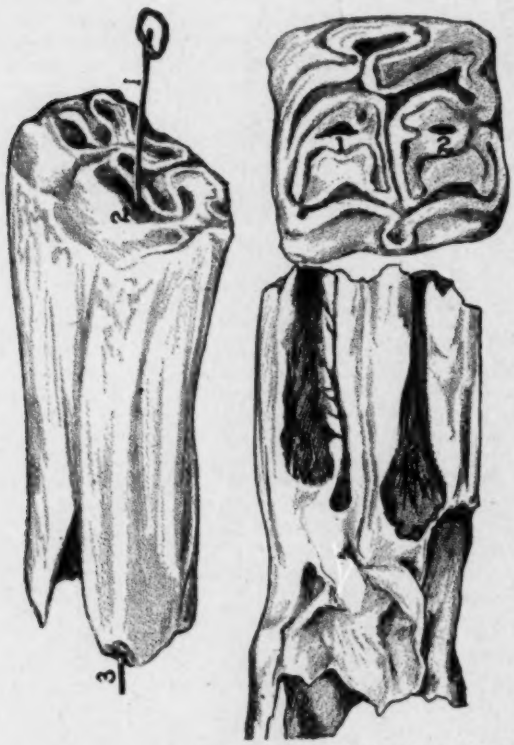
In forwarding Captain Hayes' report, Dr. Haasjes writes: "Enclosed is a letter received from New Guinea about my case of urethral obstruction in a male foal that was published in the section on Surgery and Obstetrics in the January, 1944, issue of the JOURNAL. Your journal seems to go places."

Obviously, the two cases were of the same nature, but in neither was the character of the obstructing material nor the mechanism of its formation identified. The one was cured by urethrotomy and the other by milking out the material.—Editor.

*The title of the report is "Urethral Obstruction in a Foal—Urethrotomy."

The Symptomatolgoy of Equine Toothache

What are the symptoms of toothache in a horse or mule? When a stinking, maxillary molar splits like the shell of an open oyster and crams the facial sinuses to the bursting point with pus, perhaps desiccated by age, and the opposing segment of the mandibular arcade trespasses into the vent from lack of attrition, the integer is something more than a toothache. Or let's put it this way: When a thumping dentitis of some years before has led to such a tragic end, the toothache stage has passed long ago. The question is, "How could the toothache stage have been detected?" What, of clinical nature, does a horse do when a molar gets to thumping? It must thump and there must be a prodrome and syndrome, in view of the generally accepted etiology of pain. But, except for the horsey groom who'd see the first sign of a perverted nictation, the semiology of toothache in horses and mules seems to escape notice. The aching tooth signalizes its presence, by and large, later on by the complex phenomena mentioned above. No disease of a domestic animal, manhandled as a horse is through life, was ever permitted to run its course as unseen and unchecked as toothache. And see the unfortunate result —months of pain, encroachment and blocking of the only air passages a poor horse has, and incurable sinusitis all the while crying to high heaven for attention before it's too late. In the light of all it invariably leads to, it is no credit to the equine specialist or general practitioner that toothache is not detected in its early stage. The mitigating circumstance, however, is that toothache in animals is not easy to detect; in horses, the diagnostic procedure is cumbersome—difficult—because the symptoms are vague and the teeth hard to examine minutely. The decayed molar (the others are seldom decayed) is detected when it is morbid, through and through, and nature is preparing to eject it spontaneously by splitting it and driving in a wedge from the opposite denture. Odorous breath or nasal discharge are clues but often at that already advanced stage, the casual examination fails to detect the presence of the culpable molar because locating it requires a critical examination not easily performed. The decayed molar generally retains its normal contour and fixity in the arcade until "the beginning of the end", perhaps long after the purulent rhino-sinusitis is well advanced, for the sake of argument let us say, a year or more too late.



—*From Animal Dentistry, 1904*

Drawings from Specimens of Decayed Molars of Horses

Left.—Decayed mandibular molar of a young horse detected by picking at the infundibulum. 1, 2, 3 wire stylet passed from table to root.
Right Upper.—1 and 2 show open infundibula leading to the decayed interior shown in lower figure, the 1st (4th) maxillary molar of a horse past middle age.

What then is the clinical tableau that would lead to an early diagnosis—the diagnosis of toothache? The early symptoms, though quite characteristic, would be noticed only in horses watched for abnormal acts and behavior of a minor character. Eating more slowly, delicate eaters leaving a small part of the meal uneaten, wetting

the bottom of the feed box but not profuse ptyalism, leaving a meal unfinished and returning to it later, quick turns of the head to one side, froth about the commissures, a certain distinguishable degree of languor, slobbering of water into the pail, jerking (not pronounced) the head from the watering trough, unusual objection to bridling in otherwise well behaved horses, are symptoms of toothache in the pampered horse. Keeping the head to one side while eating, profuse ptyalism, rejecting boluses of feed into the box, and maxillary swelling, are symptoms of the advanced stage, when a sliver of tooth is wounding the cheek. The vague symptomatology of toothache is, therefore, apparent, since the suspected diagnosis could not be confirmed without laying the horse down,positioning the mouth wide open with a speculum, wiping off the arcades and with the aid of a headlight, searching for an open infundibulum with a sharp steel pick especially made for the purpose. When all of this trouble is taken, it is surprising how often a channel leading from table to pulp cavity will be found. The examination is shortened in many cases by beginning at the 1st (4th) molar, the one more often decayed than all of the others combined.

This atavistic essay was inspired by an inquiry the other day about a pick veterinarians used to employ in diagnosing early decay of the teeth in horses, in the days of "My kingdom for a horse." The instrument is valuable because a decayed maxillary molar has an open infundibulum or two which caused the toothache, and the ensuing débacle. This is also an occasion to say that purulent rhino-sinusitis of horses is always of dental origin with stress on the *always*.—*L. A. M.*

Prefrontal Lobotomy

Prefrontal lobotomy is a brain-cutting operation performed for the relief of the mental disease, schizophrenia. At the recent meeting of the American Psychiatric Association in Philadelphia, Drs. Freeman and Watts, of Washington, D. C., reported that more than 50 per cent of the patients operated upon were cured and have been usefully occupied after six months to seven years, and but 15 per cent had to be kept in a mental hospital.

The frontal lobes of the cerebrum are cut but no part removed, and the result, as a layman would say, is a changed personality, quoting, "sometimes more productive than before." There is also importance in the knowledge of mental disorders that may stem from this operation. —*Abstracted from Science News Letter.*

Mortality from Bowel Operations*

Decline of mortality from major surgery may be credited to various factors other than improved general measures against the spreading of infections. Recognition, measurement and replacement of water, carbohydrate, electrolyte, vitamin, and hemoglobin deficiencies decrease the degree of surgical risk, independent of the risk from infection. In bowel surgery, besides the usual aseptic techniques, modifying the danger of infection from the fecal stream is paramount. Changing the diet from protein to carbohydrate on the ground that intestinal pathogens are mainly proteolytic, advocated by Firor and Poth, is objectionable in patients already depleted of protein reserves from preceding protein starvation, due to gastrointestinal lesions. The use of sulfaguanidine and succinylsulfathiazole is a more direct method of attack on intestinal bacteria, as it offers the opportunity to provide a better balanced and more palatable diet during the preoperative period. In all cases studied systematically, the ingestion of succinylsulfathiazole caused dramatic reduction in *Bacterium coli* and *Bacterium aerogenes* in less than five days, both in the absence and presence of mucosal lesions and in patients consuming adequate protein.

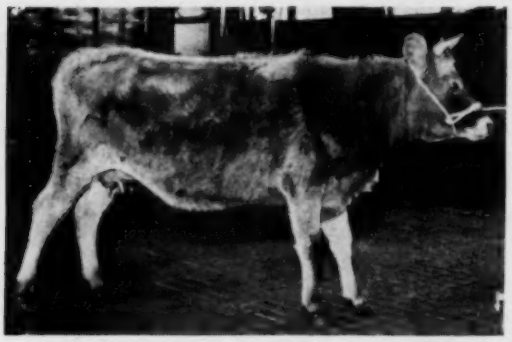
*Archer, H. L. and Lehman, Edwin P., University of Virginia, School of Medicine: Clinical Laboratory Experiences with Succinyl Sulfathiazole. Annals of Surgery, *119*, (Apr. 1944): 518-525.

Although castration and diethylstilbestrol therapy give important results in carcinoma of the prostate, neither is curative alone, nor combined. The relief of pain and regression of growth and metastasis are, however, results not achieved by any other therapy.

Melano-Sarcoma in a Senior Yearling Heifer

—After W. F. Guard, 1934

Fig. 1—Melano-sarcoma of the udder in a Jersey heifer. Positioned for photographing.



—After W. F. Guard, 1934

Fig. 2—The heifer shown in figure 1, after ablation and healing. The interest in this case is the rarity of melanin-impregnated sarcomas in young animals, especially of the bovine species; the prompt healing of the surgical wound; and the escape from metastasis. The cow was under observation for a number of years.

Sweet Clover Poisoning in Surgery

Performing surgical operations on animals fed or grazed on sweet clover is dangerous practice, notwithstanding that spoiled sweet clover hay is the main source of the toxic anticoagulant, dicoumarin. There is no lack of reports on grave bleeding following surgical operations (castration, dehorning) in cattle fed sweet clover hay of good quality or turned on sweet clover pasture. In a study of sweet clover disease, Hansen* emphasized the danger in pastured animals and recommended that animals be kept from eating that roughage in any form (hay, pasture, silage) for two weeks before being subjected to a surgical operation. Second year cutting is the most dangerous.

*Hansen, Albert A.: Sweet Clover Disease. North Am. Vet., 9, (Dec. 1928): 49-51. [Note that the article antedates the discovery of dicoumarin as the toxic principle.—Ed.]

Sodium Iodide for Fistula of the Withers

Superceding the widely heralded "internal treatment of fistula of the withers and poll evil" which, about fifteen years ago, to a large extent, replaced the unpopular surgical operations (particularly for the former), is sodium iodide solution injected intravenously, plus strain 19 *Brucella abortus* vaccine. The new strategy for these misnamed diseases of the horse and mule is, perhaps, too new for the epilogue but it certainly rings true and the room for improvement is not questioned. The internal therapy of these purulent sinuses is arsenic, iodine, and willow bark, mixed with feed.

Calfhood Vaccination in Quebec*

The Veterinary Division, Department of Agriculture of Quebec, has carried out a trial of calfhood vaccination during the last four years in accordance with the usual plan of vaccinating calves, 4 to 8 months old, and exposing them to naturally infected herds showing around 10 per cent infections, which is the average for the province. During the four years, 4,150 calves in 350 herds were vaccinated. Of a group of 1,500 vaccinated as calves, 13 (0.86%) aborted, a figure corresponding to that of the U. S. Bureau of Animal Industry in 21,000 vaccinated calves which was 1.1 per cent. The conclusion drawn was that the favorable time to vaccinate calves is between 6 and 8 months old and that calfhood vaccination in the manner practiced is a worthy procedure.

*Trudel, F.: Calfhood Vaccination Against Brucellosis in the Province of Quebec. Canada. J. Comp. Med. and Vet. Sci., 8, (Apr. 1944): 97-101.

The vaginal discharge of cows infected with *Trichomonas fetus* will usually be milky or possibly straw colored; that of cows affected with brucellosis is brown and often flocculent.—*W. L. Boyd, quoted in the Norden News.*

Artificial Insemination in Thoroughbreds

Although the question of artificial insemination in Thoroughbreds has not yet become a live issue among breeders, during the last year a lively interest has been aroused in its possibilities, according to an editorial in *Blood Horse* (May 13, 1944). Money is not lacking and many are anxious to breed their mares to stallions not accessible to them, because of distance on the one hand and the breeding capacity of stallions on the other. These deterrents are coupled with the undeniable fact that the technique for inseminating mares has not been worked out to a practical and economically sound degree, especially to the degree of receiving semen by air mail or air express. Fascinating as the prospect seems, research on the subject has not advanced far enough to insure reliable results. Moreover, the Jockey Club has declared itself against the practice and will not register foals of man-inseminated mares for reasons not made known. Perhaps, the fear of breaking up the present economic set up (of breeding) is a factor. The value of the offspring of great sires is governed largely by their scarcity, and besides, the editor does not omit, a vast system of regulation would have to be established to prevent misrepresentation.

Intraperitoneal Use of Sulfanilamide

At the clinic of the Northwestern Indiana Association in Hammond, a speaker remarked that the use of sulfanilamide in the peritoneal cavity, following hysterectomy, in bitches had removed the former danger from postoperative peritonitis and chronic adhesions around the ligated stump and that the mortality has been reduced to a low rate. This report corroborates the numerous reports in medical literature of two or more years ago which, in effect, showed that the mortality from potential or established peritonitis had been sensationally decreased and that alleged interference with healing is not supported by extensive observation. Infection from *Escherichia coli, Clostridium perfringens,* and hemolytic and nonhemolytic streptococci commonly cultured from perforative peritonitis, for example, is usually prevented by intraperitoneal administration of sulfanilamide. Dr. J. Gordon Dees, in *Mississippi Doctor,* September, 1940, was the first to report the use of this drug in the peritoneal cavity.

Livestock Goals Cut to Meet Feed Deficit

Under the above headline, papers of May 29, 1944, carried stories about the sharp reduction in hogs, poultry, eggs, turkeys, and cattle planned by the War Food Administration to offset the depleted reserves of livestock feed. Tentative plans are for a continued high level of field crops, but the prospective cut in livestock would reduce total farm and food production to a level between those of 1942 and 1943.

The tentative 1945 goals compared with those of 1944 are:

	1945	
Wheat	68,000,000	acres
Corn	103,000,000	acres
Hogs (spring crop)	57,000,000	head
Hogs (fall crop)	38,000,000	head
Eggs	4,250,000,000	dozen
Poultry	700,000,000	head
Milk	119,000,000,000	lb.
	1944	
Wheat	67,000,000	acres
Corn	102,000,000	acres
Hogs (spring crop)	62,000,000	head
Hogs (fall crop)	40,000,000	head*
Eggs	4,600,000,000	dozen
Poultry	856,000,000	head
Milk	118,000,000,000	lb.

*1943 fall pigs totaled 55,000,000.

Phenothiazine: Critical Surveys Amazing

If the salvage of worm-infected animals and subnormal body weight from the use of phenothiazine cannot be accurately computed when used for strongyloses, it can be calculated with mathematical precision when used to clean up the intestinal tract of sheep infected with nodular disease, by simply comparing, at the abattoir, the yardage of intestine fit for making catgut in treated and untreated flocks. The result of several such calculations, already announced, shows that the salvage of catgut material is amazing.

Three million pounds of phenothiazine were used for the treatment of worm infections in livestock in 1943, or one million pounds more than in 1942. It has practically raised the barrier to catgut production.

CLINICAL DATA

Antibiotic Therapeutic Agents

Since the discovery of penicillin and gramicidin, new antibiotic substances have been announced in such rapid succession as to throw confusion into the developing field they represent. The following tabulation is intended to bring the most salient facts up to date.

At the present time, 16 or more of these antibiotic substances have been discovered and tested for their germicidal properties but pending further tests as to their therapeutic value, only penicillin and gramicidin need be considered. The discovery of these agents is of academic interest just now.

NAME	SOURCE	ACTION
Gramicidin*	*Bacillus brevis*	Lyses gram-positive bacteria. Has nontoxic range.
Tyrocidin†	*Bacillus brevis*	Lyses both gram-positive and gram-negative bacteria. Fairly toxic.
Penicillin	*Penicillium notatum* and *P. chrysogenum*	Combats gram-positive aërobes and anaërobes. Low toxicity.
Clavacin	*Aspergillus clavatus*	Highly germicidal against both gram-positive and gram-negative organisms. Toxic.
Streptothricin	*Aspergillus lavendulae*	Combats various gram-positive and some gram-negative bacteria. Low toxicity.
Pyocyanase	*Pseudonomas aeruginosa*	Lyses many gram-positive and gram-negative bacteria. Low toxicity.
Actinomycin	*Aspergillus anti-bioticus*	Selective action. High toxicity.
Flavicin	*Aspergillus flavus*	*See* penicillin. Low toxicity.
Fumigacin	*Aspergillus fumigatus*	Lyses gram-positive organisms. Low toxicity.
Pyocyanin	*See* pyocyanase	Combats gram-positive bacteria.
Notatin	*See* penicillin	Acts against both gram-positive and gram-negative bacteria.
Citrinin	*Penicillium citrinum*	Acts against all bacteria.
Penicillic acid	*Penicillium puberulum*	*See* penicillin.
Aspergillic acid	*Aspergillus flavus*	Active against both gram-positive and gram-negative organisms. Highly toxic.

Data obtained in part from an article in American Journal of Public Health by S. A. Wakeman, Ph.D., New Jersey Agricultural Experiment Station.

*Contains tyrothricin.

†Fraction of gramicidin.

The Isolation of Salmonella Anatum from the Feces of a Dog

JOHN E. CRAIGE, V.M.D.
Presidio of Monterey, California

To VETERINARIANS, *Salmonella anatum* is probably best known as the causative agent of "keel" in ducklings, sometimes producing 100 per cent mortality among newly hatched ducklings. It is found in the ovaries and abdominal abscesses of infected ducks and resembles *Salmonella pullorum* in many of its characteristics. Salsamendi[2] found it to be incriminated in a case of fatal enteritis in a cat. It has been isolated from human beings suffering from gastroenteritis, from a case of cholecystitis, a case of cerebrospinal meningitis;[3] and many times from normal carriers.[3, 4] In 1,000 Salmonella identifications at the New York Salmonella center,[3] *S. anatum* was found 27 times, ranking ninth in prevalence among 38 strains identified. When a broth culture was fed experimentally to a man, a mild diarrhea of short duration developed.[5] This organism has also been recovered from silver foxes,[6] turkeys,[7] the mesenteric lymph glands of apparently normal hogs,[8] and from retail meat products.[9] Following is an account of the isolation in May, 1943, of *S. anatum* from the feces of a dog located at Camp Lockett, California.

Two shetland sheep dogs were presented showing diarrhea, inappetance, hyperirritability, incoördination, partial paralysis of the hind quarters, blindness, and fits of running and barking. One dog developed such severe fits that he was given nembutal and kept in a semiconscious state for three days. He passed only scant feces during the period that he was under anesthesia. The other dog had a slightly fetid diarrhea throughout the course of the disease. The history did not furnish any clues as to etiology.

The condition of the dogs did not seem improved after six days of symptomatic treatment. At that time, a fecal sample, freshly voided by one of the dogs on a clean concrete floor, was taken with a flamed platinum loop and streaked on a plate of SS agar, Difco. No fecal sample was obtained from the other dog. After twenty-four hours incubation at 37 C., many colonies typical of the Shigella-Salmonella group were observed. Sulfaguanidine was administered in doses of 7 gr., three times a day for three days to one dog, and 5 gr., three times a day for four days to the other dog. By the third day of this treatment, both had regained their appetites and subsequently made a complete recovery. No additional laboratory studies of these dogs were possible.

The organism recovered was studied culturally and biochemically and found to be a nonlactose-fermenting, gram-negative rod, belonging to the Salmonella group. It was identified as *S. anatum* (III,X,XXVI . . ,e,h,1,6.) by the Army Veterinary School, and by Dr. P. R. Edwards at the University of Kentucky.

DISCUSSION

The fact that *S. anatum* was the causative agent of the condition previously described was not established. However, the organism was present in the feces of one dog in significant numbers. The prompt recovery of both dogs upon treatment with sulfaguanidine suggests that either *S. anatum* or some other pathogen which would be overcome by that drug might have produced the disease. There are reports of the association of Salmonella organisms with meningitis in man.[3, 10] In fact, *S. anatum* was recovered from the spinal fluid of one infant dying of cerebrospinal meningitis.[3] It is quite possible that these dogs suffered from Salmonella cerebrospinal meningitis; however, it is also possible that toxic substances produced by the organism in the intestinal tract evoked these symptoms.

The public health significance of *S. anatum* infection in a cat was pointed out by Salsamendi.[2] It has been established that *S. anatum* can produce disease and even death in human beings. Since dog and cat

From the Ninth Service Command Laboratory, Army Service Forces, Presidio of Monterey, Calif.

feces are frequently not disposed of adequately and since there is such an intimate contact between many human beings and their pets, it seems quite possible that human beings could contract *S. anatum* infections from infected dogs or cats. Studies should be conducted to determine the prevalence of *S. anatum* and other pathogenic organisms in the feces of dogs and cats and their relationship to human infections.

SUMMARY

a) *Salmonella anatum* was isolated from the feces of a dog. The dog was one of two showing diarrhea and encephalitic symptoms. Both dogs recovered promptly after treatment with sulfaguanidine.

b) Theories of possible pathogenesis are advanced.

c) The public health significance of this finding is mentioned.

ACKNOWLEDGMENT

The case history was furnished by Major James D. Twohig, V.C., who examined and treated the dogs.

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[4]Galton, Mildred M., and Quan, Alice Lee: Varieties of Salmonella Isolated in Florida During 1943. Am. J. Hygiene, *38*, (1943): 173-177.

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[8]Rubin, H. L., Scherago, M., and Weaver, R. H.: The Occurrence of Salmonella in the Lymph Nodes of Normal Hogs. The Am. J. Hygiene, *36*, (1942): 43-47.

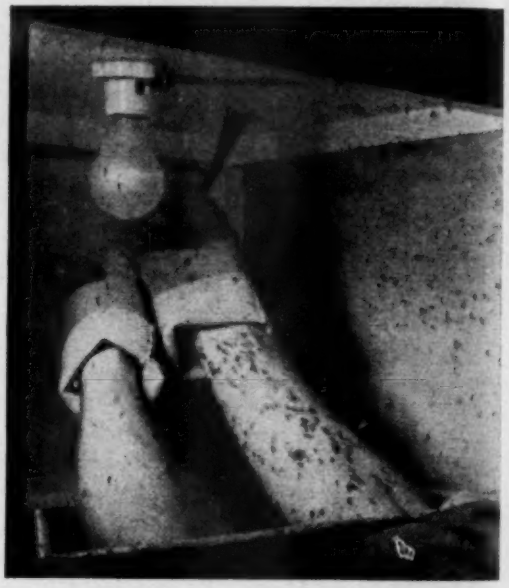
[9]Cherry, W. B., Scherago, M., and Weaver, R. H.: The Occurrence of Salmonella in Retail Meat Products. Am. J. Hygiene, *37*, (1943): 211-215.

[10]Bray, W. E., and Meredith, J. M.: Fatal Salmonella Intracranial Infection in an Infant. J. Lab. and Clin. Med., *28*, (1942): 152-156.

The loss of food from diseases of animals is acknowledged to run into big figures but the loss from inapparent troubles, mostly preventable, is probably much greater. The price paid for insects, worms, and subclinical dietary deficiencies and faults is not small.

Malaria

Malaria is regarded as Medical Problem No. 1 by the medical service of the Army. Our troops are operating or stationed in the principal malaria centers of the world: southwest Pacific, southwest Asia, India, eastern Mediterranean, equatorial Africa, and tropical America. Malaria has never been controlled by drugs; it has been suppressed (but not prevented) and the mortality has been lowered. The application of local repellents and aërosol sprays to soldiers' quarters to diminish the number of infective mosquitos is the most practical prophylactic measure. The time-honored suppression of mosquito breeding is manifestly difficult and of course futile for mobile troops.



—From Science News Letter

Fig. 1—These are the arms of a research worker at Rutgers University who is testing the relative potency of mosquito repellents. The repellent used on the right arm had spent its force while that on the left arm is still affording protection.

Of the soldiers in continental United States suffering from malaria, 75 per cent contracted the infection on foreign soil. The rate among foreign troops is, therefore, dangerously high, considering the small number who have seen foreign service. In short, the postwar malaria problem is something the medical profession will have to face with courage.

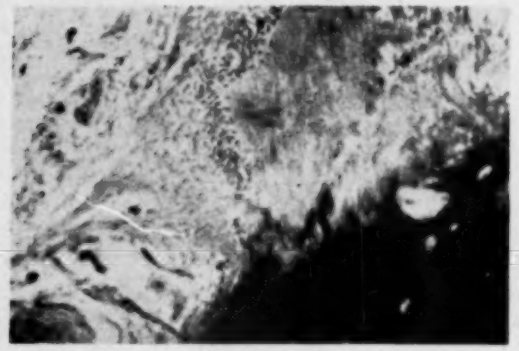
Marie's Disease in Dogs

Two cases of Marie's disease (=hypertrophic pulmonary osteoarthropathy) in dogs are reported by Cotchin in a recent issue of the *Veterinary Journal* (London).[1] Readers of the JOURNAL (AVMA), will recall the excellent, illustrated article[2] on the

—*From the Veterinary Journal*

Fig. 1.—Boiled out bones of the fore limb (left) and hind limb of a Golden Spaniel affected with Marie's Disease.

subject by Poley and Taylor published in the April, 1942, issue, two of the pictures of which are reproduced herewith (fig. 3 and 4). Although reports of this skeletal dystrophy have been rare in English veterinary literature, its absence from periodicals and text books appears to be due more to its nonrecognition as a special entity than to its apparently rare occurrence. Obviously, small animal specialists of long experience have seen this chronic osteoperiosteal infirmity of the limbs of dogs, but passed it off as a strange, localized phenomenon without troubling to investigate its nature—its relation to chronic organic disease. Alfort pathologists have found certain cases associated with pulmonary tuberculosis without, however, insisting that all cases are tuberculous. Poley and Taylor, in their well-rounded case report, describe a grave, chronic giant-cell tumor of one lung associated with the local, osseous lesions of their case and thus confirm the pulmonary connection pointed out by Panisset, Verge, and others in France and Italy. It is significant to note that the two cases reported by Cotchin[1]



—*From the Veterinary Journal*

Fig. 2.—Photomicrograph of the lung of the dog whose limbs are shown in figure 1.

were associated with lesioned lungs, one, a 4-year-old Borzoi, suffering from respiratory trouble which proved to be pulmonary tuberculosis, and the other, a Golden Spaniel 7 years old, suffering from a pulmonary newgrowth from which tubercle bacilli could not be isolated. While metastasis was not demonstrated in these nor in formerly reported cases, all of them suggest an interesting relationship between chronic disease of the lungs (which is sometimes tuberculous) and a pronounced and characteristic reaction in the leg bones. Moreover, these two cases, coupled with the one reported by Poley and Taylor[2] and those of the French and Italian authors during the past twenty years, appear to catalogue hypertrophic pulmonary osteoarthropathy

[1] Cotchin, E., M.R.C.V.S., Royal Veterinary College: Marie's Disease (Hypertrophic Pulmonary Osteoarthropathy), Two Further Cases in Dogs. The Veterinary Journal (London), *100*, (March, 1944): 45-47.

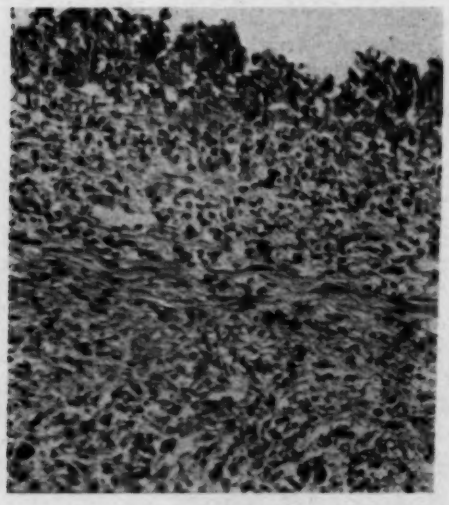
[2] Poley, Philip P., D.V.M. and Taylor, J. Spottiswood, M.D.: Hypertrophic Pulmonary Osteoarthropathy with a Bronchiogenic Giant Cell Tumor in the Left Lung of a Dog. J.A.V.M.A., *100*, (Apr., 1942): 346-352.

among respiratory diseases of dogs which may escape detection during the developmental stage. The disease has been iden-

—After Poley and Taylor, 1942

Fig. 3.—Pointer affected with Marie's disease (hypertrophic pulmonary osteoarthropathy), described in the April, 1944 issue of the JOURNAL.

tified in captive deer; also in lions, dogs and other carnivores. The fact that the tuberculous theory of Verge (1929) has not been universally confirmed is less im-



—After Poley and Taylor, 1942

Fig. 4.—Photomicrograph of giant cell tumor of the left lung of Pointer shown in figure 3.

portant than the lung-limb relationship which appears to have been established by critical investigations of capable pathologists.

Thinks Pathology of Azoturia Settled by Fedotov

Dear Editor:

This note is in appreciation of your recent article on azoturia in the JOURNAL of the AVMA [April, 1944].

I thought it might be of interest to you, in case it has not already reached your attention, to refer to an article by a Russian —A. I. Fedotov—published in 1940. He finds high sugar levels in the blood of affected horses and a low alkaline reserve. In view of this, he administered 500-600 international units of insulin with good results. Higher doses caused marked unrest which was relieved with 20 cc. of 1 per cent glucose solution. The original article is in Russian and entitled "Insulinaterata pri paralitrcheskoi hemoglobinemiĭ loshadei" published in *Sovetskala Veterinariia* (= Vet. Med. Soviet), 1940 (6): 36-39. I sincerely hope that you have not been deluged with references to this article and that it may be of value to you.

s/M. W. HALE, Lt. Colonel, V. C.

[We have not been deluged with reference to Fedotov's classical research on the nature of azoturia for the obvious reason that our article was not a thesis on the pathology of the disease except for the local nervous injury which has nothing to do with sugar metabolism. If insulin is the cure, that's indeed a happy find. Dr. John Cozart used insulin in his azoturia cases in 1928, but it did not seem to click. We fear that the investigating pathologist will have to look beyond COH for the formula of the intoxicating agent.—*L. A. M.*]

Posology of Penicillin

Penicillin is a fine powder in its commercial state. It is measured, not by weight, but by an arbitrary standard known as an Oxford unit—the amount required to inhibit *Staphylococcus aureus* under specified conditions. There are 100 Oxford units per milligram. In 1943, more than 21 billion Oxford units were produced. The dosage for a single infection runs from 500,000 to 1,000,000 units. Cost: $20 per 100,000 units. As previously stated in these columns, the scarcity and cost are due to production difficulties: critical equipment, long cycle of fermentation, exacting sterility, temperature, etc.

Penicillin Impotent Against Tuberculosis

Experiments carried out by Smith and Emmart of the United States Public Health Service (*Pub. Health Rep;* March 31, 1944) indicated that penicillin had no effect on the growth of tubercle bacilli in culture mediums, on the production of tubercles on chick membrane, or on the course of the disease in experimentally inoculated guinea pigs. All preparations tested, however, reduced the extent of tubercle formation on the chorioallantoic membrane but without showing any effect on reducing the incidence of the infection.

Synthetic Quinine Produced

Early in May, the Polaroid Corporation announced at Cambridge, Mass. the success of its efforts to synthesize quinine. At present, it is only a laboratory product and has been produced in minute quantities. However, it is the exact duplicate of the highly complicated architecture of the natural quinine molecule, according to Fred J. Stock, chief of the Drug and Cosmetics Section of the Chemicals Bureau of WPB. From the commercial standpoint, it must be learned whether production of the synthetic is practicable in view of the fact that it is the result of many complicated reactions. The starting materials are said to be low in cost. If the various questions of commercial production can be solved, the discovery should be of tremendous advantage to this country.

Dicoumarin and Vitamin K

Since Campbell and Link of the Wisconsin Agricultural Experiment Station discovered the principle in spoiled sweet clover that causes sweet clover disease in cattle, the principle which they named dicoumarin has interested the medical profession in its use as an anticoagulant in the treatment of thrombosis. The fly in the ointment, however, was the fear (as in cattle) of excessive prolongation of coagulation time and thus causing serious bleeding. Synthetic vitamin K having been found to be of no value to quickly reverse the action of dicoumarin, led to the discovery that natural vitamin K_1 oxide, given intravenously dissolved in alcohol, had the desired action; and furthermore to the fact that natural vitamin K is superior and more rapid in action than the synthetic product. Heretofore, the transfusion of fresh blood was the only clinical method of reducing the hypothrombinemia caused by dicoumarin.* The facts coming to light on the uses of dicourmarin and vitamin K in human medicine are of academic and perhaps clinical value in animals.

**Nutrition Reviews, 2, (Feb. 1944): 47-48.*

DDT Louse Powder

DDT is the name adopted by the Army for dichlorodiphenyl-trichloroethane, an insecticide undergoing critical tests in the control of insect-borne diseases among soldiers. This chemical was first synthesized in 1874 but its insecticide property was not known until 1939. By 1943, tests for toxicity in man, involving a great deal of work, showed that its adoption as the standard louse powder was justified. A dusting of the powder repels lice for three to four weeks if not washed off. Though not ovicide, its action is lasting enough to "get" the new hatches. DDT is no less effective against fleas, flies, bedbugs, ants, and other insect pests. It will be several months, the Medical Department announces, before it will be available for widespread use.—*From Bulletin of the Medical Department, April, 1944.*

Poultrymen Advised to Cull Flocks Closely

A bulletin of the National Poultry Advisory Council, dated May 24, 1944, advised poultrymen of the United States that 100,000,000 hens should be marketed during June, July, and August. Reason: conservation of already low feed supplies and of labor. They were told to be sure that every cull is out—low producers, broody hens, early molters—and also the roosters, those "barn yard saboteurs" which, when their job is done, should have "their cockadoodles and their feed cut off."

America's poultrymen have done such a wonderful production job that, in the first quarter of 1944, 130,000,000 dozen eggs above the quota for that period were pro-

duced. The surplus was so large that the government was forced to increase its buying, and latest reports indicate that some of the surplus will even be processed for use in livestock and poultry feeds, which almost constitutes a "vicious cycle" of sorts.

Penicillin Producers to Get More Lactose

Steps taken by the War Food Administration, in coöperation with producers, to avert a threatened shortage of lactose, important in its use in the growing of the mold that yields penicillin, will result in a 1944 lactose production double that of previous years, said the Office of War Information on May 18.

The output of lactose, or milk sugar, this year is expected to reach 14,000,000 lb., WFA officials predict. Present estimates of the War Production Board indicate that penicillin manufacturers will need 6,000,000 to 7,000,000 lb. annually—a figure approximating the entire yearly production of lactose in previous years. The War Production Board says that there is now no indication that current experiments in the synthetic production of penicillin, which would eliminate the need for lactose, will be successful in the near future, nor is there any indication that such a method, if found, would be commercially practicable.

Amino Acids and Vitamins

The discovery of relationships between certain fractions of the B complex and certain amino acids is one of the interesting, and obviously significant, developments in the study of deficiency diseases. The demonstrable relation between pyridoxine and alanine, for example, is perhaps not a unique phenomenon, as other, at least, partly known relationships between these two nutritional factors are being brought to light. It's a question of priority, like the egg and the hen, of which one begets the other or *vice versa*. More power to the chemists who are solving these $64 questions which are coming upon the practice of veterinary medicine in leaps and bounds. One thing is sure, chemistry will not long remain at the tail end of the veterinary college curriculum. The onetime baffling problems of the bacteriologist were simple compared with these, and as to their relative importance, one looks hopefully to the future for the answer.

Dogs with Tapeworms Endanger Sheep

USDA *Farm Science Notes* dated April 10, 1944, warns flockowners of the danger to sheep from dogs infected with *Taenia ovis* by pointing to a recent incident in which 164 sheep out of 429 were condemned by federal meat inspectors on account of the presence of tapeworm cysts in their flesh and various organs, acquired from ingesting worm eggs scattered about the pasture by dogs. Proof of the source of the cysts was furnished by investigations of Parasitologist Benjamin Schwartz of the BAI. Anthelmintic treatment of the suspected dog removed a complete tapeworm. The incident has importance to veterinarians by warning that the presence of dogs on ground inhabited by sheep is a matter not to be overlooked.

Sneezeweed Poisoning

Sneezeweed *(Helenium autumnale)* a plant injurious to livestock growing in various parts of North America was studied categorically in the Rocky Mountain Region by the Forest Service, United States Department of Agriculture. In one area of 1,500,000 acres in Colorado nearly 8,000 out of 600,000 ewes and lambs die annually from grazing on sneezeweed. Two flocks of ewes of 1,000 each were used to determine the nature of the toxicosis and the remedy. Final tabulation of a three-year study of these two flocks shows that an 80 per cent reduction of the losses could be obtained by light grazing on sneezeweed areas, avoiding early spring and late fall pasturing in these areas, and culling out poisoned ewes in the fall even though they may seem to have recovered.—*From Forest Service, USDA, Apr. 3, 1944.*

Buying War Bonds and selling them again is pretty much like driving the Japs off of an island and then walking out and letting them return and take over again.

NUTRITION

MATERIAL FURNISHED BY THE COMMITTEE ON NUTRITION

Vitamins and Calf Diseases

PAUL H. PHILLIPS, Ph.D.

Madison, Wisconsin

Many calves are lost every year because of scours, pneumonia, navel infections, colds, and general unthriftiness. It is extremely important that calves be saved during these wartime conditions. Recent work at the University of Wisconsin has shown that a high percentage of the calves can be saved through proper nutrition.

Scours Often Caused by Lack of Vitamins

Low levels of vitamin A and nicotinic acid in the diet is one important cause of scours in calves. If enough of these are given to the calf along with the usual calf ration, many of the common diseases of the calf will automatically disappear.

Vitamin A Has an Important Place in Calf Nutrition.—Calves are born deficient or lacking in vitamin A. They obtain their first supply of vitamin A from the colostrum or first milk after calving. It is important that calves get enough of the colostrum to supply this vitamin. It should be fed in reasonable amounts to the calves at any time it is on hand, regardless of the age of the calf.

Colostrum is an excellent food and should not be wasted. It contains 10 times as much vitamin A, 3 times as much vitamin D, 2 times as much ascorbic acid, and 3 times as much riboflavin as ordinary milk.

The symptoms of vitamin A deficiency in calves usually begin with watery eyes, cold in the head with a discharge from the nose, sometimes a cough, and scours—mild to begin with, but severe if they continue. The calves suffer for three to ten days with this disease and then die from an acute case of pneumonia. Mild deficiencies in vitamin A are noted by general unthriftiness, a dead, roughened hair coat, and lack of growth. Lack of this vitamin weakens the entire system and always causes injury to the digestive organs, with scours as the result. For this reason, vitamin A is needed by the calf.

The Place of Nicotinic Acid (niacin) in Calf Nutrition.—Newborn calves may have enough nicotinic acid in their bodies to supply their needs for the first few days. With this supply to start with and from the small amount found in milk, they manage to get along until the rumen begins to function. The bacteria of the rumen usually make all members of the vitamin B group, among them nicotinic acid. Milk contains very little nicotinic acid, and when the calf needs extra amounts of this vitamin it must be obtained elsewhere.

Nicotinic acid is needed to keep the digestive organs working properly. Lack of this vitamin causes congestion of blood in the blood vessels and flabbiness of the muscles along the digestive tract. The absorption of vitamin A may be intefered with. The lack of nicotinic acid causes a digestive disturbance which will result in scours.

The Place of Ascorbic Acid (vitamin C) in Calf Nutrition.—Calves are born with large amounts of ascorbic acid (vitamin C) in their blood. However, most of this supply is used up in the first two or three days, and the calf must rely upon that which is in milk until it can begin to make this vitamin within its own body. This will require about three weeks. Ascorbic acid is important in helping to ward off infection. In cases of pneumonia or inflammation of the navel, the ascorbic acid in the blood is reduced to very low levels. Giving ascorbic acid to the newborn calf helps it to control

From the Department of Biochemistry, University of Wisconsin, Madison.

various types of these active infections. Serious losses from "navel ill" can be prevented or cured by giving ascorbic acid. It also helps greatly in overcoming calf pneumonia.

VITAMIN D PREVENTS RICKETS

The lack of enough calcium, phosphorus, or both, or vitamin D, causes rickets in calves. Rickets in the calf is first observed as stiffness, and in later stages as "bowed legs." Vitamin D aids calcium and phosphorus in building bones and therefore is needed to form a good sound skeleton.

Vitamin D is usually the limiting factor in rickets, especially in the fall-dropped calves. The prevalence of rickets is most marked during the winter period when there is little sunshine. Sunshine (except winter) irradiates animals when they are outside, and they obtain their vitamin D in this way.

PREVENTION AND TREATMENT OF CALF DISEASES

Prevention of the appearance of these diseases of calves is good insurance. This can be accomplished by giving vitamins in capsule form at the rate of 1 capsule per day, each containing:

Vitamin A	5000 I.U.
Niacin	50 mg.
Ascorbic acid	250 mg.
Vitamin D	200 units

New technical advances have now made it possible for certain processors to put all of these vitamins into a single sealed capsule. Such a procedure protects the vitamin A potency against destruction by the oxygen of the air for periods of two years or more, and the capsule can be kept at an ordinary room temperature. Some veterinary supply houses are stocking these capsules. When calves show deficiency diseases, they must be treated promptly. It may be necessary in acute cases to use 2 capsules per calf per day.

In case of scours, and capsules are not available, break 3 or 4 fresh eggs into 4 lb. of milk, stir thoroughly and feed such a mixture for several days. This will supply vitamin A, and since most scours result from low vitamin A, this home remedy will control many cases of scours. However, eggs are low in niacin and therefore they will not help if this factor is missing.

Food and Nutrition Experiments Essential

Recognizing that food and nutrition experiments are of vital importance, particularly during periods of food scarcity, the Office of Price Administration is making it easier for those needing rationed foods for research purposes to obtain them, the agency announced on April 25, 1944.

Those who engaged in food and nutrition research during 1942 (period of base use) have had only to apply to their local boards for an allotment, but those who had no need for rationed foods for these purposes until after 1942 have had to apply to Washington for their supplies. Under the new provision, effective April 29, 1944, they may apply to their OPA district office and the district office may grant the request, provided it is found "in the public interest" to do so. Whether butter is an important source of vitamin A; how the time for ripening cheese can be reduced to speed lend-lease delivery; and what effect, if any, special diets may have in the regeneration of blood in blood donors are typical problems that are being studied. With millions of pints of blood plasma needed on battlefronts and in hospitals, experiments at the Nebraska Agricultural Experiment Station to determine the effect special diets may have in replenishing the blood supply of blood donors are being watched with great interest. About 30 women have volunteered for the series of tests.

At 26 of the state agricultural experiment stations, a study is being made to determine the real value of butter as a source of vitamin A. The experiments have required the purchase of butter, a rationed fat, on the open market. Cheese is also an important lend-lease food. Scientists at the Wisconsin Agricultural Experiment Station are studying ways of shortening the ripening process by changing its structure before it is stored. One of the mechanical methods used to change the cheese structure is to grind it. Cheese is also needed for examination and evaluation of samples of the product supplied under lend-lease, since it has been necessary to set up standards that differ from those of cheese intended for domestic use.

Buy War Bonds and keep them for the duration. G. I. Joe expects that much of the home commando.

EDITORIAL

The Foot-and-Mouth Disease Family

THERE are three clinically indistinguishable virus diseases commanding attention in farm-animal practice, namely: foot-and-mouth disease, vesicular stomatitis, and vesicular exanthema (Traum.). They can be differentiated only by animal inoculation or contact exposure. Since the history of outbreaks, the symptoms, and the lesions are similar, the importance of early diagnosis is self-evident. That is, foot-and-mouth disease, the unmanageable menace to livestock production in foreign countries, some of them neighbors, must be promptly excluded by immediate resort to the tests set down and stressed by the United States Bureau of Animal Industry. "Keeping Livestock Healthy," the 1942 year book of the USDA contains the directives to follow.

Foot-and-mouth disease (aphthae contagiosa), while essentially an affection of cattle, swine, sheep, and goats, spreads among cloven-footed ruminants of wildlife, and is pathogenic for guinea pigs by inoculation. The horse, being manifestly immune to foot-and-mouth disease, shows no reaction (blisters and fever) to virus inoculations which cause the disease in the other animals.

Vesicular stomatitis affects horses, cattle, swine, and guinea pigs (experimentally) but does not occur in swine from natural exposure (Mohler and Traum, and Hagan). It may, therefore, be regarded as a horse and cattle disease in farm-animal practice, but, nevertheless, obligates the practitioner to make the classical inoculations which would show that horses as well as the other animals react to them.

Vesicular exanthema is the California swine disease that supervened the outbreaks of foot-and-mouth disease of the 1920's. Cattle, horses, sheep, goats, guinea pigs, and hedgehogs are immune (Crawford, 1936), but according to Traum (1935), when a typical reaction (fever then blisters) develops in cattle, swine, and guinea pigs but not in the horse, the disease is vesicular stomatitis. In typical vesicular exanthema of swine, the reaction is mild in horses and absent in cattle and guinea pigs.

From these facts, now indelibly registered from controlled studies, the making of a prompt diagnosis of exanthematous contagions of farm animals becomes an immutable expectation in veterinary practice. With the mounting animal production in the United States and what it signifies in the present international débacle, neglect in that respect could have grave repercussions. An example of vigilance in the diagnosis of such an outbreak is found in the report of Sanders and Quin presented before the annual meeting of the Indiana Veterinary Medical Association in January, wherein vesicular stomatitis in a herd of 1,500 hogs at a Middlewest serum plant is described. As all attempts to determine the source of the virus failed in the investigation of this outbreak, the former belief that only experimental vesicular stomatitis occurs in hogs needs revision. The three types of foot-and-mouth virus identified by Vallée and others, and the four types of immunologically distinct viruses of the California swine disease mentioned by Crawford, together with clinical, pathologic, and epizoötiologic similarities, would materially complicate the control problem were inoculation tests not available.

—From Public Health Reports

Insecticidal dusting by airplane along the Potomac for the control of mosquitos at the national capital conducted by the United States Public Health Service.

Lieutenant Herman L. Moser 1911—1943

Lt. Herman L. Moser, V.C., A.U.S., (O.S.U. '35), 31, when killed in an airplane crash near Biggs Field, Texas, July 28, 1943, became one of the first casualties among the veterinary officers of World War II. The lieutenant was veterinary

Lt. Herman L. Moser

reserve officer practicing at Pontiac, Ill., when called to active duty in August, 1942. Lt. Moser was born at Dalton, Ohio, Sept. 10, 1911, and after his graduation located for practice at Pontiac where on March 11, 1939, he was married to Miss Jayne Fox of that city.

He is survived by his widow and daughter Barbara, his parents, two brothers and a sister. His unfortunate accident in the line of duty is deeply mourned by his Illinois colleagues with whom he participated actively in association work.

5TH WAR LOAN
THE STRENGTH BEHIND THE MAN BEHIND THE GUN LIES IN THE FAITH YOU HAVE IN THIS INVESTMENT

Reclassification of Federal Veterinarians Wins Approval

Just as we go to press, word is received that the House of Representatives has approved, by a vote of 255 to 80, restoration of an item in the U. S. Department of Agriculture appropriation bill for 1945 which provides for reclassification and upgrading of federal veterinarians and meat and livestock inspectors. Thus, at long last, it appears certain that Congress will correct an inequitable situation that has existed for some years and which has made it increasingly difficult, if not impossible, to recruit and retain qualified veterinarians in sufficient numbers for the efficient operation of services vital to the livestock industry and public health of the nation.

For a long time, efforts have been made to obtain proper compensation for federal veterinarians and their assistants; the former particularly have been employed in salary grades substandard to those specified by the Classification Act of 1923. They have been the lowest paid large professional group in the Department of Agriculture. According to testimony presented in hearings before various committees of the Senate and House, 61.5 per cent of the veterinary employees of the Department were in the P-1 classification (beginners' grade), whereas other professional groups in the Department of Agriculture have only 21 per cent in that grade. Similar inequities existed with respect to the number of years served by veterinarians in the lower grades instead of being advanced, after acquiring experience and greater responsibilities.

Space does not permit publication, in this issue, of a full account of the work done by several organizations and many individuals in support of the reclassification measure. A more detailed account will appear in a future issue. Needless to say, the American Veterinary Medical Association and constituent state associations, the AVMA Board of Governors and Executive Board, the Committee on Legislation, all were active and diligent in numerous ways, including appearances at committee hearings in Washington by Association officers and representatives. In addition, the U. S. Live Stock Sanitary Association, the National Association of Federal Veterinarians, the National Assembly of Chief Live Stock Sanitary Officials, and a number of national and state livestock and producers organizations joined in advocating the reclassification item.

CURRENT LITERATURE

ABSTRACTS

Ascorbic Acid Deficiency in Calves

Cole, Rasmussen, and Thorp, Michigan State College, in a study of the plasma ascorbic acid levels of calves affected with an epidermatosis of the ears, cheeks, neck, and shoulders found the levels lower than in normal calves, in other words, they found that this dermatosis was a clinical manifestation of scurvy—a disease of variable physiognomy as shown by scurvy of the adult human being and Barlow's disease of infants.

When the calves were treated with given amounts of ascorbic acid, the cutaneous lesions responded and the general health was slowly improved. The clinical tableau was an exudative erythema described as a series of moist, waxy, clinging scabs, thickened skin of the external ear associated with unthriftiness, and shaggy coat. The ascorbic acid levels of the affected calves ranged from 0.08 to 0.38 mg. per cent as compared with 0.30 to 0.38 mg. per cent for one of the normal calves, studied over a period of two months. In the course of the treatment, the lesions relapsed when ascorbic acid was withheld and responded again when dosing was resumed.—[*C. L. Cole, R. A. Rasmussen, and Frank Thorp, Jr., Michigan State College: Dermatosis of the Ears, Cheeks, Neck, and Shoulders in Young Calves. Vet. Med., 39, (May, 1944): 203-206.*]

Trombidiosis (=Jigger Bites)

Jiggers or chiggers (chigo) also called *Leptus autumnalis* and other members of the family Trombidiidae are parasites of flowers, grasses, shrubs, and grain. The larvae live independently by feeding on snakes, rodents, and man. Although called autumnal, they are active from spring to fall. The Chigo or jigger, produces an erythematous macula at the point of penetration and an intensely itching papule surrounded by a red (hemorrhagic) halo. Hemorrhagic points or urticarial wheals are variations from the typical lesions. The larva falls off in a day or two but the lesion may continue to annoy the victim with a stubborn secondary infection for an uncomfortably long time.

The recommended preventive is 5 per cent sulfur in talcum, and the curative therapy is benzocaine, 2 parts in 15 parts of flexible collodion applied with a glass rod (stopper rod). The secondary reactions are treated with 5 per cent sulfathiazole or sulfadiazine ointment. Soldiers may have to be evacuated when field duties prevent resort to proper treatment.—[*Maximilian E. Greenmayer, M.D.: Medical Entomology in Relation to Tropical Dermatoses, J.A.M.A., 123, (Oct. 23, 1943): 454-458.*]

Agriculture and the Veterinary Profession

The cataclysm of another great war has disclosed the vital importance of agriculture but great groups remain unaware of the fact. Livestock being the mainstay of agriculture, the veterinary profession is inseparably linked therewith. During the last prewar year, the estimated value of the farm output was £264,000,000 of which £186,000,000 were for livestock and their products. The present agricultural statistics show:

Area and animals	*England and Wales*	*Scotland*
Total area, acres.....	37,132,688	19,069,000
Acres in crops and grass	24,643,261	4,571,166
Livestock and products (value)	£154,560,000	19,330,000
Total value (all products)	£219,430,000	41,345,000

Of the total 435,954 farms in Great Britain, 193,977 are of 5 to 50 acres; 71,401 from 50 to 100 acres; 40,914 from 150 to 300 acres; 14,235 over 300 acres; and 77,773 from 1 to 5 acres.

The dairy cattle of Great Britain number 5,703,000 and the beef cattle, 2,204,000. Of the 150,000 dairy farmers selling milk, 50 per cent have 12 cows or less, and there are 25,000 accredited herds.

There is much ignorance among electors as to the difficulties and risks of farming and these must be thoroughly informed and convinced of the vital necessity of restoring agriculture to prosperity now that food supply is a serious national problem. The importation of foreign grain and meat and the rapid development of sea travel made farming unprofit-

able because of overseas competition. This has been said to have kept the British farmer less progressive and resourceful but that is not true *vis-à-vis* his fine livestock and excellent crops raised. A great national movement to help British farmers is something that must be undertaken. Meanwhile, the veterinary service adapted itself to the changes—from equine and small animal, to livestock practice as the need arose. State service, local meat inspection, and research have advanced. The control of animal diseases has lagged because owners of livestock have felt prepared to stand wastage from disease and loss of milk rather than to go to the expense of alleviation, and the profession has been hampered by not being called upon to participate in commissions and committees formed to deal with livestock problems. On the contrary, there is a galaxy of technical advisers, inspectors and other experts with a flair for the veterinary art, playing the rôle of advisers on the health and disease of animals. The profession must not be exploited by the politician, drug firm, or by any other interest, and fuller publicity to our claims must be given. Agriculture must be state-aided and although our task of securing proper recognition in the nation's counsels is great, it must be accomplished.—[*Capt. W. G. Wragg, M.R.C.V.S.: Agriculture and the Veterinary Profession. The Veterinary Journal, 100, (Feb. 1944): 26-31.*]

Testosterone in Scrotal Development

It is generally known that the scrotum helps to regulate the testis temperature, which in turn influences spermatogenesis. Yet much less attention has been given to the hormonal regulation of the scrotum than to that of the other accessory sex organs.

The mere presence of a heavy foreign body does not suffice to cause normal scrotal development. It has not been shown that purely mechanical factors are not involved in its development.

In the first experiment, 20 immature albino rats were castrated through a suprapubic incision and divided into two groups. One group received injections of testosterone. After one month all the animals were killed. It was found that neither the castrate controls nor the testosterone treated castrates showed any signs of scrotum development at this time, although the seminal vesicles and prostates of the treated animals were hyperplastic.

The second experiment was similar to the first except that postpubertal rats were used, to determine whether or not the hormone could prevent the scrotal atrophy which occurs after the castration of postpubertal rats. At the end of seventy-five days, the scrotums of both groups were significantly smaller than those of intact normal males of the same age, but the scrotal involution was less pronounced in the treated than in the untreated castrates. The seminal vesicles and prostates of the treated castrates were considerably larger than those of normal males.

In the third experiment, an artificial testis (glass) was substituted for the immature testis which was removed. At the end of one month, scrotal development was very slight in those animals from which both testis and epididymis had been removed but was practically normal in the second (only testis removed) and third (testis replaced by glass bead) groups.

These experiments show that both mechanical distention and stimulating testoid compounds are required for the development of the scrotum.—[*Hans Selye: "Factors Influencing Development of Scrotum." Anat. Rec., 85, (1943): 377-386.*]

Animal Health and Food Supply

The death of many cows annually, the lowering of the milk supply, and the high mortality among pigs greatly diminish the production of food. Much of this is preventable. Sound management and good feeding raise resistance to infections and contagions.

In dairy cows, lack of protein and phosphorus, and the presence of mastitis suppress lactation. In pigs, the intake of proteins, minerals, and vitamins must be regulated to insure maximum growth and maintain health. Sickly litters, lack of mother's milk, rickets, and digestive disorders traceable to feeding are unquestionably responsible for the high mortality. Animal proteins (skimmed milk, whey, tankage) serve best. Where these are scarce they may be diluted with linseed meal, 40 : 60. Dicalcium phosphate, air-slaked lime, and bonemeal are the type of minerals to incorporate in the pig ration. Greens and sunlight are reliable sources of vitamins, but good sanitation is needed to prevent the lethal, filth-borne infections.

"Dust, Drafts, Dampness, and Dirt,"* are the four dangerous "D's" in the lives of young pigs. In short, proper feeding, good hygiene, and the control of bovine mastitis, are three major points to keep in mind in food production.—[*Alan H. Robin, B.V.Sc., Veterinary Officer, Department of Agriculture of South Australia, J. Dept. Agric. South Australia, 47, (Feb. 1944): 294-296.*]

*From the 1943 report of the Special Committee on Swine Diseases, American Veterinary Medical Association.

Since the ingenuity of two-fisted men in the Army and Navy rates above par on the fighting fronts, the peril of the war lies in "letting them down" on the home front.

BOOKS

Our Equine Friends

Every time we get morally knocked out by showers of bulletins, circulars, and pamphlets glorifying the march of mechanization, along comes Dinsmore with a message that puts us back on the beam by the simple process of telling the truth about the horse and his hybrid contemporary. The stories of whence came the Arabian horse that American gentlemen farmers have been fetching over, the conquest of Montezuma by the mounted soldiers of Cortez, the invasion of Florida by Juan Ponce de Leon, and Hernando de Soto's march to "Old Man River" were never better told than in the writings of Dinsmore. His timely documentation of hippomotorology always reminds us that man will have a lot of questions to answer in the final check-up of human affairs for having tried to chuck the horse and the mule into the background in favor of the more spectacular way of mobilizing the rays of the sun in his struggle for existence. When man digs deep into the bowels of the earth to tap vegetation that has been stored away for ages in the form of coal and oil and gas, he's not half as wise as he thinks. Why, right on the surface there are annuals and perennials growing in profusion, ever ready to be converted into the most economical power the earth has ever produced, namely, horse power. Let us suppose that engineers and archeologists and statisticians set out to figure how much vegetation and how many eons of time it took to furnish the power for one whirr of a motor. They would certainly find that the big "hitch" is a pretty economical machine. A few acres of land will store up a lot of power in the flesh of a mule, and its source is not as exhaustible as the slumbering vegetation in the hidden recesses of the earth, which we, of 1944, are using up at a terrific rate. As a source of power, all the coal and oil in the crust of the earth are but a bagatelle compared with the everlasting vegetation of the farms which (in the light of our knowledge) should serve mankind through generations and centuries and eras to come—long after the potential of the oil well has gone forever.

We are not trying to add words to the wrtings of Dinsmore on the horse and mule, but what he writes for practical application is not all—what he says between the lines is considerable. We may all have passed on before the wisdom, cloaked in the releases of the Horse and Mule Association of America, is fully understood by the general population. It all adds up to a plea not to be foolish—a plea not to set aside the laws of Nature which were not included in the Declaration of Independence. The domestic species of the genus Equus were on the job a long while before. Just like all the animals of the farm which man needs for power and food, the horse and the mule are neglected in the political arena in the sense that politics does not put domestic animal production and usage at the top of its agendum.

You'll like this booklet and you'll learn a lot by reading this refresher on the Equidae that are most useful to us at the present time.—[*Our Equine Friends. By Wayne Dinsmore and John Hervey. 32 pages. Illustrated. Drovers Journal Press, Chicago. 1944. Price 25 cents.*]

Analytical Chemistry of Industrial Poisons, Hazards, and Solvents

One phase of public hygiene of no small concern has to be written around the ever-increasing exposure to refrigerants, fumigants, insecticides, germicides, solvents, diluents, and plasticizers now widely employed in the industries and professions. To understand their toxic properties, their nature, and their potentialities, is a universal desire in the world of today, and an obligation particularly imposed on the various branches related to the biologic sciences and the liberal arts. This treatise is volume I of a series of three volumes on Chemical Analysis which deals with that part of the subject indicated by the title (industrial poisons, hazards, and solvents). While essentially a chemist's manual and guide, it is also an over-all collection of scattered, up-to-date material of general interest and is certainly an extremely convenient reference book for veterinarian: student, teacher, clinician, research worker, who, for example, may desire the latest knowledge on lead, mercury, selenium, fluorine, arsenic, and other familiar names in veterinary toxicology. While this reviewer is not qualified to write a *critique per se*, by taking the treatment of these familiar subjects as the criterion, there is no risk in recommending this technical book for the library of home and office.—[*Analytical Chemistry of Industrial Poisons, Hazards, and Solvents. By Morris B. Jacobs, Ph.D., Senior Chemist, Department of Health, New York City. Cloth. 659 pages. Tables and references. Interscience Publishers, Inc., New York. 1944. Price, $7.00.*]

Up to now, the American people deserve the credit of having financed the war independent of the banking system to a large extent, and thus preserved their power in making postwar adjustments.

THE NEWS

Borden Award to be Administered by AVMA—Nominations Invited

The Board of Officers of the Borden Company, one of America's leading organizations in the dairy field, have made available a Borden Award for administration by the American Veterinary Medical Association. This award will consist of a gold medal and one thousand dollars, and has been made available for 1944 and 1945. It will be given to the individual to be selected by the AVMA Committee on Awards for outstanding achievement in research in the field of dairy-cattle diseases, especially the control of these diseases.

At the present time, Borden Awards are administered by five other associations; the American Chemical Society, the American Dairy Science Association, the American Home Economics Association, the American Institute of Nutrition, and the Poultry Science Association. These awards were established in 1936 to give appropriate recognition to those who have made outstanding contributions in food chemistry, biochemistry, human nutrition, animal physiolgy and genetics, agricultural production, animal feeding and other related sciences, and to stimulate further research in these fields.

The awards are made for research which has been reported in public documents or scientific journals. Thirty-one Borden Awards have been made up to the close of 1943, each consisting of a gold medal and a thousand dollars. Of these, the American Chemical Society has administered four; the American Dairy Science Association, fourteen (seven in the field of dairy manufacturing and seven in the field of dairy production); the American Home Economics Association, seven; the Poultry Science Association, six. The AVMA and the American Institute of Nutrition will make recommendations for their first awards in 1944, the former to be presented at the 81st annual meeting in Chicago next month.

Nominations Invited

President C. W. Bower, chairman of the AVMA Committee on Awards, has announced that the Committee will receive nominations for the Borden Award for 1944 from association members. The recipient may be a resident of the United States or Canada; no Borden employee is eligible. Nominations should be addressed to Dr. Bower at 3119 Stafford St., Topeka, Kansas; the closing date is July 20, 1944. In submitting nominations, a statement should be included covering the nominee's achievements in research in the field of dairy-cattle diseases, together with citations of the literature in which his work has been published.

The American Veterinary Medical Association is privileged to administer one of these awards. It is a fitting recognition by the donor of the fundamental importance of cattle health to the dairy industry, and the contributions of veterinary science to the welfare and advancement of that industry.

Veterinary Science Newsletter Appreciated

The Office of War Information writes us under date of June 14, 1944, as follows:

"You will probably be interested in the following report which arrived from our outposts in St. Pierre de Miquelor (island off the coast of Newfoundland). We receive numerous letters of thanks for our Science Newsletter service but generally all the sciences are grouped together. In this instance, however, veterinary science was mentioned specifically. The report reads:

'Dr. Henri Monrad, chief public health doctor and surgeon, who also acts in the capacity of veterinarian, and Dr. Jean Lassner, who specializes in general medicine and laboratory work, very highly praised the *Veterinary Science Newsletter*. They said that while some of the items were strictly for professional veterinarians, many others were of general medical interest. Dr. Monrad, for instance, mentioned a treatment for horses which he had found in one of the *Newsletters* and which he applied with success.'

"We wish you might see some of the enthusiastic letters we get from all over the world. We are expanding our distribution lists constantly, and already many are requesting that the service be continued after the war. We wish to express once more our appreciation of your coöperation in preparing the material each month for the *Veterinary Science Newsletter*."

South to Have New Veterinary College

Seeing the urgent need of more training in veterinary medicine, Dr. F. D. Patterson, president of Tuskegee Institute, has succeeded in getting a grant of $495,000 to establish a "Division of Veterinary Medicine," and to improve the library and home economics department. The step is a part of the general plan to advance agriculture among the Negro population. Quoting: "Within a few years he (Dr. Patterson) hopes to be turning out first class veterinarians. At present, no Negro college offers training leading to a degree in veterinary medicine." The researches on soils, plants, livestock and poultry carried out at Tuskegee (Alabama) and Southern University (Louisiana) are pointed out as an index of what the Negro colleges are doing in making a sizable contribution to wartime farm production.—*Abstract from USDA Release, May 27, 1944.*

Proposed Amendments to By-Laws

The attention of the members is called to the publication in the May and June, 1944, issues of the JOURNAL of the "Proposed Amendments to Administrative By-Laws." On account of space required in this issue for the program of the 81st annual meeting, the third publication of the proposed amendments has been postponed until the August issue.

Can You Help Locate These Members?

Aasen, Stephen W., Marshfield, Ore.
Ament, Roland W., Veterinary Repl. Pool, Seattle ASF Depot, Seattle, Wash.
Bird, A. G., Vet. Insp., Dept. of Health, Santurce, P. R.
Booth, Thomas E., 5 Charles St., White Plains, N. Y.
Bowie, B. S., Nimmons, S. Car.
Bowstead, W. E., Vet. Gen. Hosp., A.P.O. 950, c/o P.M., San Francisco, Calif.
Bushnell, J. K., 107 Lackawanna, Lexington, Ky.
Kaser, C. L., Edmore, Mich.
Kress, Joseph D., 315 Pleasant St., Williamsville, Va.
Lancaster, Harry R., 25 Riverside Homes, Paso, Wash.
McKercher, Arthur, 517 Washington Ave., S., Lansing 15, Mich.
Moughon, William C., Box 609, El Campo, Texas.
Rodgers, Robert J., Gen. Del., Smithville, Texas.
Siver, Dougal, 429 Wrightwood Ave., Apt. 1-N, Chicago, Ill.
Sledge, J. L., 3708 8th St., Meridian, Miss.
Stein, A. J., 321 S. Adams, Monte Vista, Colo.
Stephenson, Dale R., 1631st S.U., Ft. Wayne, Mich.
Sternfels, Mark, A.P.O. 10443, c/o P.M., San Francisco, Calif.
Traskus, Anthony D., 240 N. Main St., Pittston, Pa.
Tyler, Lindy, 805 Burlingame Ave., Burlingame, Calif.
Wiseman, E. S., Camp Vet., Camp Edwards, Mass.

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws — Article X, Section 2.

First Listing

ALLEN, JAMES H.
4th S. C. Veterinary Detch., Camp Forrest, Tenn.
D.V.M., Cornell University, 1915.
Vouchers: P. D. Fichandler and E. K. Elmer.

BARNES, F. E.
P. O. Box 594, Newman, Calif.
D.V.S., Kansas City Veterinary College, 1909.
Vouchers: A. C. Rosenberger and R. P. Marsteller.

HARKINS, CURTIS I.
P. O. Box 651, Suffolk, Va.
D.V.M., Alabama Polytechnic Institute, 1923.
Vouchers: C. D. Price and G. H. Randall.

HODGES, THOMAS F.
1267 N. 41st St., East St. Louis, Ill.
D.V.M., Alabama Polytechnic Institute, 1940.
Vouchers: J. S. Stein and O. E. Jung, Sr.

HOURRIGAN, JAMES L.
217 Capitol Bldg., Phoenix, Ariz.
D.V.M., Kansas State College, 1940.
Vouchers: D. Miller and V. Mikkelson.

JACKLEY, JOHN G.
P. O. Box 405 Fresno 8, Calif.
V.M.D., University of Pennsylvania, 1910.
Vouchers: R. B. Griffenhagen and G. Gordon.

KRAUS, WILLIAM E.
Veterinary Station Hosp., Ft. Sam Houston, Texas.
D.V.M., Colorado State College, 1938.
Vouchers: J. DeMattei and A. D. Tolley.

NELSON, M. R.
Peterson, Iowa.
D.V.M., Iowa State College, 1943.
Vouchers: C. H. Covault and E. V. Beamer.

RICHARDSON, L. W.
Ft. Scott, Kansas.
D.V.S., Kansas City Veterinary College, 1910.
Vouchers: R. F. Coffey and K. R. Dudley.

SCHOFIELD, EARLE F.
Box 578, Greenwich, Conn.
V.S., Ontario Veterinary College, 1906.
Vouchers: E. Laitinen and G. E. Corwin.

TENNEY, FORREST F.
35 Pine St., Peterboro, N. H.
D.V.M., Ohio State University, 1935.
Vouchers: C. L. Martin and R. W. Smith.

Second Listing

Bateman, Robert A., P. O. Box 3071, Saratoga, Wyo.
Filson, Jim G., P. O. Box 311, Jamestown, Pa.

Gaetz, Richard H., 783 Ellicott St., Buffalo, N. Y.
Gauntt, Philip L., Jr., 1472 W. State St., Trenton, N. J.
Johnson, Leo R., 134 N. Magnolia Ave., El Cajon, Calif.
Krenz, F. J., Mendota, Ill.
Lang, George K., A.P.O. 677, c/o P.M., Presque Isle, Maine.
Murphy, Austin J., 4743 Cape Way, San Diego 7, Calif.
Plamondon, Ralph J., 168 N. 3rd, Hillsboro, Ore.
Ready, William C., 12 Berkley St., Washington 16, D. C.
Schwarz, Alfred, 3414 Elaine Pl., Chicago, Ill.
Stewart, George M., 2800 Crest Ave., Cheverly, Md.
Swalbert, Ralph C., 255 S. Main St., Spanish Fork, Utah.
Wade, George N. Jr., 110 W. Main St., Mechanicsburg, Pa.
Werrin, Nathaniel, 524 Claiborne St., Jackson, Miss.

1944 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's serior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

Alabama Polytechnic Institute

STONE, PRICE, D.V.M.
Hurtsboro, Ala.
Vouchers: J. K. MacNamee and O. E. Jung, Jr.

Ontario Veterinary College

FRITZ, LEROY C., B.V.Sc.
Silver Creek, N. Y.
Vouchers: F. E. McClelland and M. Kopp.

Texas A. & M. College

ANDERSON, ALONZO A., D.V.M.
528 Eleventh St., Evanston, Wyo.
Vouchers: J. H. Milliff and R. P. Marsteller.

BARNES, CHARLES M., D.V.M.
Box 386, Spur, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

BOTT, ANTHONY R., D.V.M.
Box 794, College Station, Texas.
Vouchers: F. P. Jaggi, Jr., and R. P. Marsteller.

BRENNAN, FRANK M., JR., D.V.M.
Box 360, Rt. 1, Fontana, Calif.
Vouchers: J. H. Milliff and R. P. Marsteller.

BROOKS, WILLIAM G., D.V.M.
Jefferson, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

BROWN, ROBERT L., D.V.M.
1209 Bowie, Amarillo, Texas.
Vouchers: F. P. Jaggi, Jr., and R. P. Marsteller.

CORLEY, GLENN P., D.V.M.
Bentonville, Ark.
Vouchers: J. H. Milliff and R. P. Marsteller.

CROSS, JAMES L., D.V.M.
3 N. Sixth St., Temple, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

EDMONDSON, ALAN H., D.V.M.
240 N. Mentor Ave., Pasadena, Calif.
Vouchers: J. H. Milliff and R. P. Marsteller.

FLATEQUAL, HARRY J., D.V.M.
943 Bandera Rd., San Antonio, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

GARRETT, ROBERT M., D.V.M.
Rt. 2, Conroe, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

GRIMES, GEORGE E., D.V.M.
3108 Willing, Ft. Worth, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

HOGGE, ARTHUR L., JR., D.V.M.
Rt. 2, McKinney, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

HUDDLESTON, C. H., D.V.M.
P. O. Box 582, Sabinal, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

JOHNSON, DONALD F., D.V.M.
Box 1162, Brady, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

LASKEY, HERBERT H., D.V.M.
2629 28th St., San Diego 4, Calif.
Vouchers: J. H. Milliff and R. P. Marsteller.

LICHTY, DWIGHT L., D.V.M.
Box 52, Woodstock, Ill.
Vouchers: J. H. Milliff and R. P. Marsteller.

LINDLEY, RIES R., D.V.M.
2226 N. 3rd St., Abilene, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

LIVINGSTON, PRICE S., D.V.M.
Box 86, Sherman, Miss.
Vouchers: J. H. Milliff and R. P. Marsteller.

MARTIN, HARRISON S., D.V.M.
204 Sharkey Ave., Clarksdale, Miss.
Vouchers: J. H. Milliff and R. P. Marsteller.

MORIN, ROBERT L., D.V.M.
215 N. Jackson, Clinton, Ill.
Vouchers: J. H. Milliff and R. P. Marsteller.

NEAL, FRED C. JR., D.V.M.
104 N. E. 16th, Oklahoma City, Okla.
Vouchers: J. H. Milliff and R. P. Marsteller.

NICHOLSON, KENNETH G., D.V.M.
1838 E. Nock St., Milwaukee 7, Wis.
Vouchers: A. A. Lenert and W. C. Banks.

NUGENT, GEORGE C. JR., D.V.M.
137 Eastern Ave., Gloucester, Mass.
Vouchers: J. H. Milliff and R. P. Marsteller.

OLDHAM, CLYDE C. JR., D.V.M.
Box 1337, Abilene, Texas.

Vouchers: F. P. Jaggi, Jr., and R. P. Marsteller.

PHILLIPS, WARREN A., D.V.M.
92 Maple St., Winchendon, Mass.
Vouchers: J. H. Milliff and R. P. Marsteller.

RAWLS, THOMAS A., D.V.M.
2760 Arts St., New Orleans, La.
Vouchers: J. H. Milliff and R. P. Marsteller.

RILEY, WILLIAM E., D.V.M.
910 Cole St., Bryan, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

SEALY ROSCOE O., D.V.M.
2039 W. Gramercy, San Antonio, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

SMITH, AUGUSTUS M., D.V.M.
Snowflake, Ariz.
Vouchers: J. H. Milliff and R. P. Marsteller.

TINER, JACK D., D.V.M.
141 Fairview, San Antonio 4, Texas.
Vouchers: J. H. Milliff and R. P. Marsteller.

Second Listing

Colorado State College

Allred, J. Newell, D.V.M., 120 W. Lake St., Ft. Collins, Colo.

Anderson, Robert K., D.V.M., P. O. Box 473, Ft. Collins, Colo.

Brandt, Vincent J., D.V.M., 1005 Mathews, Ft. Collins, Colo.

Candlin, Francis T., D.V.M., 667 Grant St., Denver 3, Colo.

Carroll, Walter D., D.V.M., 1921 West St., Pueblo, Colo.

Collins, G. Ben, D.V.M., Bishop, Calif.

Conklin, M. H., D.V.M., 211 W. Olive St., Ft. Collins, Colo.

Crump, John A., D.V.M., Box 521, Flagstaff, Ariz.

David, Lyman D., D.V.M., Monte Vista, Colo.

Dove, R. A., D.V.M., LaVerne, Calif.

Eldred, Lawrence L., D.V.M., 1524 Thirteenth Ave., Greeley, Colo.

Fauks, W. K., D.V.M., 3421 N. W. 20th, Oklahoma City, Okla.

Green, Joseph D., D.V.M., Rush, Colo.

Hanks, Sidney, F., D.V.M., Deer Trail, Colo.

Hudspeth, Phil K. III, D.V.M., 2307 Elizabeth St., Pueblo, Colo.

Jensen, Donald W., D.V.M., P. O. Box 326, Manassa, Colo.

Johnson, Calvin E., D.V.M., Sanford, Colo.

Jones, Douglas D., D.V.M., 712 Woodlawn, Canon City, Colo.

McCord, Robert C., D.V.M., 146 First Ave., Yuma, Ariz.

McGrath, Harold B., D.V.M., Rt. 1, Lamar, Colo.

Potter, Chester J., D.V.M., 2482 Dorland Dr., Whittier, Calif.

Rieke, Lloyd L., D.V.M., Sterling, Colo.

Ripple, William E., D.V.M., 807 Fourth St., Dodge City, Kansas.

Schoenfeld, F. James, D.V.M., Box 351, Magna, Utah.

Sheppard, A. N., D.V.M., 118 S. Washington St., Casper, Wyo.

Silverman, Charles A., D.V.M., 2343 E. B. St., Torrington, Wyo.

Smith, Earl D., D.V.M., Blanca, Colo.

Smith, Luther C., D.V.M., 2575 Clermont St., Denver, Colo.

Thackeray, Chester N., D.V.M., 200 E. Laurel St., Ft. Collins, Colo.

Warnock, Russell B., D.V.M., 722 Whedbee St., Ft. Collins, Colo.

Weinmeister, Paul, D.V.M., c/o Mrs. R. J. Blehm, Rt. 2, Box 223, Greeley, Colo.

Wolfe, Fred T., D.V.M., North Star Rt., c/o J. Eisenach, Jr., Ft. Morgan, Colo.

Kansas State College

Bardshar, Edward, D.V.M., Mt. Hope, Kansas.

Brock, W. E., D.V.M., 1446 Laramie St., Manhattan, Kansas.

Campbell, Robert D., D.V.M., 901 W. 11th St., Junction City, Kansas.

Cazier, Philip D., D.V.M., 1036 Cleveland, Kansas City, Kansas.

Combs, Oral V., D.V.M., Almena, Kansas.

Curry, Charles C., D.V.M., 1528 N. 4th, Arkansas City, Kansas.

Garvert, Leo J., D.V.M., Rooks County, Plainville, Kansas.

Grandfield, R. M., D.V.M., 1806 Laramie St., Manhattan, Kansas.

Haney, D. Ross, D.V.M., 1317 Anderson, Manhattan, Kansas.

Michael, Robert B., D.V.M., 220 Houston, Manhattan, Kansas.

Morris, Marcus D., D.V.M., 1614 Fairchild St., Manhattan, Kansas.

Porter, James A. Jr., D.V.M., 123 N. 12th St., Fredonia, Kansas.

Reed, Robert C., D.V.M., Stockton, Kansas.

Riley, Charles W., D.V.M., 509 5th Ave., Moultrie, Ga.

Riling, John L., D.V.M., 906 Mass St., Lawrence, Kansas.

Schoen, Edwin A., D.V.M., Lenora, Kansas.

Schwab, Charles B., D.V.M., Morrowville, Kansas.

Scoby, Melvin F., D.V.M., Fairview, Kansas.

Shopmaker, Allen B., D.V.M., 1010 E. 27th St., Kansas City, Mo.

Stonebraker, Ernest K., D.V.M., Shawnee Apts., Leavenworth, Kansas.

Stumpff, Charles D., D.V.M., R.R. 6, Kansas City, Kansas.

Wempe, Leo R., D.V.M., Frankfort, Kansas.

Michigan State College

Gray, Clinton W., D.V.M., 124 S. Vine St., Fergus Falls, Minn.

Konde, W. N., D.V.M., 7555 Kentucky, Dearborn, Mich.

Westcott, Roy, D.V.M., 1327 Hickory St., Box 75, Haslett, Mich.

Ontario Veterinary College

Carney, J. J., B.V.Sc., Ontario Veterinary College, Guelph, Ont., Can.
Crawley, John F., B.V.Sc., R.R. 6, Guelph, Ont., Can.
Dalton, J. C., B.V.Sc., 112 Ardagh St., Toronto, Ont., Can.
Fitts, Robert H., 3rd., B.V.Sc., Hemlock Point Rd., Chagrin Falls, Ohio.
Newlon, Robert D., B.V.Sc., 1515 Fifth St., New Brighton, Pa.
Steadman, H. R. Jr., B.V.Sc., 529 E. Sixth St., Erie, Pa.

Washington State College

Campbell, Lewis J., D.V.M., 624 M. St., Grants Pass, Ore.

COMMENCEMENTS

Agricultural and Mechanical College of Texas

At the commencement exercises of the Agricultural and Mechanical College of Texas on May 26, 1944, R. P. Marsteller, dean of the School of Veterinary Medicine, presented the following candidates for the degree of Doctor of Veterinary Medicine:

Anderson, Alonzo A.
Barnes, Charles M.
Bott, Anthony R.
Brennan, Frank M.
Brooks, William G.
Brown, Joseph H., Jr.
Brown, Robert L.
Clark, Ashley J., Jr.
Corley, Glenn P.
Cross, James L.
Douglass, Frank K., Jr.
Edmondson, Alan H.
Fagan, T. Thomas
Farrell, Joseph M., Jr.
Flatequal, Harry J.
Garrett, Robert M.
Grimes, George E.
Hargis, Charles P.
Hogge, Arthur L., Jr.
Huddleston, Coen H.
Johnson, Donald F., Jr.
King, J. S., Jr.
Kutschbach, Robert L.
Laskey, Herbert H.
Lichty, Dwight, L.
Lindley, Ries R.
Livingston, Price S.
Mallet, Roland C.
Martin, Harrison S.
Morin, Robert L.
Neal, Fred C., Jr.
Nicholson, Kenneth G.
Nugent, George C., Jr.
Oldham, C. C., Jr.
Phillips, Warren A.
Rawls, Thomas A.
Riley, William E.
Urbina, Humberto R.
Sealy, Roscoe O.
Smith, Augustus M.
Tiner, Jack D.
Titsworth, Robert M.
Vezey, Stanley A.
Weinberger, Robert
Winters, Richard W.

Kansas State College

At the commencement exercises of Kansas State College on May 21, 1944, Dean R. R. Dykstra presented the following candidates for the degree of Doctor of Veterinary Medicine:

Bardshar, Charles E.
Brock, William E.
Campbell, Robert D.
Cazier, Philip D.
Combs, Oral V.
Curry, Charles C.
Garvert, Leo J.
Grandfield, Roy M.
Haney, Daniel R.
Michael, Robert B.
Morris, Marcus D.
Porter, James A.
Reed, Robert C.
Riley, Charles W.
Riling, John L.
Schoen, Edwin A.
Schwab, Charles B.
Scoby, Melvin F.
Shopmaker, Allen B.
Stonebraker, Ernest K.
Stumpff, Charles D.
Wempe, Leo R.

U. S. GOVERNMENT

Major Robert B. Meeks (K.C.V.C., '13) was recently awarded the Legion of Merit in Iceland for exceptionally meritorious conduct in the performance of outstanding service as a veterinarian. This award was made known in a release from headquarters, European Theater of Operations, United States Army.

Major Meeks, who resided in Kansas City, Kansas, before entering the Army, assisted the Icelandic government in the control of diseases of domestic animals which prevailed there. His work with veterinarians and farmers in Iceland helped materially to lower the mortality rates in animals, and his papers on the subject were published in the Icelandic veterinary journal. The citation reads in closing, "Major Meeks won the gratitude of the Icelandic people and, by his courteous, efficient help to the farmers, promoted a more amicable relationship between the Icelandic and American peoples."

Major Meeks is the third veterinary officer of the United States Army to receive the Legion of Merit for outstanding services in Iceland, the two previously announced being Major Harry J. Robertson, of Philadelphia, Pa., and Major Frank A. Todd, of Fort Devens, Mass.

• • •

Workers of the USDA are coöperating in the improvement of agriculture and horticulture of Central and South America. A special service for that purpose is in operation. Benjamin V. Morrison of the Bureau of Plant Industry is in charge. Coöperative experiment stations have been established in Columbia and Nicaragua. The objective is the production of fiber-yielding and oil producing plants, rice, and cinchona.

• • •

Birthday of the BAI.—May 9, 1944, birthday of the United States Bureau of Animal Industry, founded on that date in 1884, was the occasion for a historical release to trade and agricultural publications which bears abstracting as a refresher in veterinary journals, for, besides being the oldest bureau of the U. S. Department of Agriculture, all of its four chiefs (Salmon, Melvin, Mohler, Miller) were/are veterinarians. The present chief—Dr. A. W. Miller—points out how closely the Bureau is geared to the war effort in controlling diseases among the coun-

try's food-producing animals and working for the betterment of animal industry through studies of breeding and feeding. Of the major achievements, the release mentions:

Contagious pleuropneumonia of cattle—eradicated.

Foot-and-mouth disease—7 outbreaks eradicated.

European fowl pest—1 outbreak eradicated.

Cattle tick fever—90 per cent eradicated.

Bovine tuberculosis—decreased 96 per cent.

Hog cholera—losses reduced two-thirds.

Cattle scabies—practically eradicated.

Sheep scabies—losses reduced 90 per cent.

Glanders—practically eradicated.

Dourine—practically eradicated.

Brucellosis and pullorum disease are listed as "under veterinary attack, resulting in substantial reduction of both maladies." The Bureau discoveries and service provide many scientific papers annually which are of benefit to the public.

AMONG THE STATES

California

Dr. McCapes in "American Men of Science."—As the result of his accomplishments in the field of veterinary science research and his outstanding leadership in the California Veterinary Association, Dr. A. M. McCapes, California Polytechnic college veterinarian, has been included in the new Seventh edition of the book "American Men of Science."

• • •

Dr. Bergh Named Mayor of Suisun City.—Dr. Henning E. Bergh (San Fran., '09), of Suisun City, who is on the staff of the Division of Animal Industry, California State Department of Agriculture, was recently elected by his fellow councilmen to serve as mayor for the new term. He has been a member of the City Council for some time and was recently reëlected.

• • •

State Association.—The fifty-seventh annual meeting of the C.S.V.M.A. was held at Hotel Whitcomb, San Francisco, June 19, 1944. The officers of the Association in charge of the meeting were John M. King, *president;* E. C. Baxter, E. G. LeDonne, and Charles H. Reid, *first, second, and third vice-presidents,* respectively; O. A. Longley, *treasurer;* and S. T. Michael, *secretary.* The printed program contained:

I. Lyon Chaikoff, University of California: "Experiments in the Revival of Organisms." "The Liver in Health and in Disease." (Illustrated.)

H. S. Cameron, University of California: "Veterinary Disease Problems in Nicaragua."

Charles H. Ozanian, Downey: "Mastitis and Reproduction Problems in Dairy Herds."

Dr. K. F. Meyer, Director of Hooper Foundation for Medical Research, addressed the meeting at the evening banquet.

s/S. T. MICHAEL, *Secretary.*

Canada

First Veterinary School of Public Health.—The announcement that the veterinary school of public health established in connection with the University of Toronto was the first college of that type to be founded should have read in addition, "in connection with a college of veterinary medicine" inasmuch as such a course has been given at McGill University since 1940 (*J.A.V.M.A., 97,* (Aug. 1940):174) and the degree of Doctor of Veterinary Public Health (D.V.P.H.) was conferred on the first class in 1941, according to Charles A. Mitchell, Dominion Animal Pathologist, Animal disease, Research Institute, Hull, Quebec. The importance of the Toronto-Guelph departure is that the school is a part of the existing veterinary educational system, and that both are flattering compliments to the two pioneer veterinary educators of North America—Smith and MacEachran.

Illinois

Short Course on Water Works Treatment.—The state university, in coöperation with the Illinois Department of Public Health, conducted a brief course of instructions on the principles and practices in water plant operation, and the chemical and bacteriologic problems involved.

• • •

Veterinary School.—Once an important center of veterinary education, Illinois took a step nearer to its former status in that respect the other day when Governor Green proposed to President Willard of the state university that a department of veterinary medicine be established under his direction. The step was urged by the State Department of Registration and Education and the State Department of Agriculture. The *Prairie Farmer, Breeders' Gazette, Drovers Journal, Chicago Tribune,* and other influential papers have been staunch supporters of the proposal which has been a live plank of the Illinois State Veterinary Medical Association in recent years. The vast livestock and allied industries of the state are pointed out as the reasons why Illinois should not go on shirking its share of the responsibility of educating personnel for the country's veterinary service.

• • •

Central Association.—The program of the Central Illinois Veterinary Medical Association

meeting held at the Leland Hotel in Springfield, May 25, 1944 announces:

W. B. Holmes, Springfield: "Motion Pictures on Sheep Scabies in Arkansas and Florida.

C. E. Fidler, Chief Veterinarian, Springfield: "State Projects—Brucellosis, Rabies, *et al.*"

The program committee—Kuttler, Merriman, Conover—urge the preparation of queries for the question box and invite the attendance of ladies for whom special features are promised.

s/C. C. HASTINGS, *Secretary.*

Iowa

Eastern Iowa Annual.—Secretary Graham submits the following tentative program for the thirty-first annual meeting of the Eastern Iowa Veterinary Association, Hotel Montrose, Cedar Rapids, Oct. 10-11, 1944:

L. H. Schrivner, Maplecrest Turkey Farms, Welland: "Turkey Feeding and Husbandry in Relation to Disease Control."

H. L. Foust, Chairman Postwar Planning Committee, AVMA: "Veterinary Postwar Planning."

Cliff D. Carpenter, Executive Officer, Institute of American Poultry Industries, Chicago, Ill.: "Poultry Disease Control and the Feed Situation."

W. L. Boyd, Chief, Division of Veterinary Medicine, University of Minnesota: "Reproductive Diseases of Cattle—Artificial Insemination."

L. A. Merillat, Editor, JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION, Chicago, Ill.: "Matters of Professional and Scientific Interest in Our Branch of Medicine."

C. C. Franks, Chief, Division of Animal Industry, Iowa Department of Agriculture, Des Moines: "Horse Practice Problems."

H. D. Bergman, Dean, Division of Veterinary Medicine, Iowa State College, Ames: "An Address."

George A. Hawthorne, President, Iowa Veterinary Medical Association, Clarinda: "Swine Erysipelas."

R. M. Hofferd, Pathologist, Corn States Serum Company, Cedar Rapids: "Diagnosis and Control of Some Communicable Diseases of Swine," followed with discussions by **J. W. Giffee, J. S. Koen, Thomas W. Munce, Frank Breed,** and **H. E. Pinkerton.**

The brucellosis-control program will be presented by Chief Veterinarian **Franks** and **J. A. Barger** of the United States Bureau of Animal Industry. **J. D. Ray, Ashe Lockhart, T. W. Munce, Frank Breed, D. M. Campbell** and **J. V. Lacroix** are listed as custodians of the question box. **H. C. H. Kernkamp** and **L. Meyer Jones,** of the University of Minnesota are named as probable reporters. Cliff D. Carpenter will officiate at the banquet and ball.

s/C. C. GRAHAM, *Secretary.*

Kentucky

Alas, Poor Quinine.—Along with the succedaneous synthetics which threaten to sentence quinine to the *oubliette* comes a report that this historic find of the Peruvian Jesuits has descended to the level of a dope for selling platers—a potion to make the lowliest Thoroughbred nose out the also rans. To what extent quinine is employed as dope, not being of record in the literature, the report in *Blood Horse* (May 20) that the stewards of Churchill Downs suspended Trainer C. Fisher for sixty days after the track chemists detected the presence of salivary quinine in one of the horses he was training is newsworthy, indeed. The horse was Fisherville, winner of a race May 11, named here to keep records straight on the revised pharmacodynamics of that century-old nemesis of Plasmodium, spp., and incidentally to inform the Surgeon General of the Army that in the matter of finding rare drugs he's overlooking the race tracks. Of course, if Fisherville had the ague, Walker is entitled to a rehearing.

Massachusetts

Massachusetts Veterinary Association.—The regular May meeting was held at the Department of Veterinary Science, Massachusetts State College, Amherst, on May 24, 1944. **J. J. Malnati,** North Adams, presented "Case Reports on Dairy Work." **A. E. Trudeau,** Holyoke, spoke on "The Mechanism of Foreign Protein."

s/H. W. JAKEMAN, *Secretary.*

Michigan

Dog Quarantine.—The dog quarantine imposed on 18 southeastern counties was wholly justified according to an editorial in the *Adrian Daily Telegram* (May 31). State Health Commissioner William DeKleine states that destroying stray dogs is the only way to reduce the spread of rabies. Owners are directed to confine their dogs to their premises and law enforcement is charged with the killing of all dogs running astray. While this will check rabies, it will not stamp out the disease, the Commissioner is quoted as stating. In Michigan no steps to stamp out rabies are taken. As a consequence, one of these periodical quarantines only leads to another because the disease exists more or less all the time. Waiting until the disease is widespread before stern measures are taken is not the logical way to handle an infectious disease. Licensing dogs is futile since a licensed dog allowed to run about is as great a menace as the unlicensed stray. In short, the Commissioner criticizes his state for failing to take the steps necessary to control rabies.

Submitted by/E. C. W. SHUBEL, Blissfield.

Missouri

Kansas City Veterinary Medical Association.—The following meetings were held the third Tuesday of each month at Hotel Phillips, Kansas City, with the programs as indicated.

January—Annual banquet and installation of officers: E. F. Sanders, *president;* E. H. Haynie, *vice president;* Gail B. Smith, *secretary-treasurer.*

February—John D. Shoeman, Atlantic, Iowa, addressed the meeting on "General Practice Problems."

March—J. S. Hughes, professor of biochemistry, Kansas State College, Manhattan, spoke on "Forum on Nutrition."

April—T. L. Steenerson, Wilkinson, Ind., discussed "Swine Practice Problems."

May—W. C. Glenney, Elgin, Ill., showed technicolor movies entitled, "Surgical and Clinical Depictions of General Mixed Practice."

s/GAIL B. SMITH, *Secretary-Treasurer.*

• • •

Oldest Veterinary Rotarian.—Arthur Trickett (K.C.V.C., '01), pioneer teacher of canine medicine, is nominated in the *Norden News* as the "Oldest Rotary Veterinarian." He joined that society in 1912. The Doctor is 77 and still actively engaged in practice—adjacent to the building in which he served as professor of canine medicine for about twenty years.

• • •

Editor Quin Promoted.—Editor Quin of *Jensal Journal* and former editor of *Bio-Chemic Review* was advanced to an executive position in the operations of the Jensen-Salsbery Laboratories, Inc., when elected vice president of that corporation, effective May 10, 1944, to succeed William T. Graham (son of President G. G. Graham), who will henceforth devote his time to other interests.

A. H. Quin (C.V.C. '20), son of the lamented A. H. Quin, Sr. (Ont. '88), was born in the pioneer circle of Iowa in which place, after graduating, he rose to a national figure in the clinical, literary, and commercial fields by wisely siezing organized veterinary medicine as the right highway to take in the upward trek. Dr. Quin—Ab for short—has been a two-fisted champion of the college-trained veterinarian, and for that his colleagues honored him with their highest compliment—the presidency of their state association (1932), and, more recently, member of their executive board. In view of what Ab Quin represents in the advancement of clinical veterinary medicine, these are but meager rewards for his spirit and achievements *pro bono publico*, not the least of which is the reform he helped to bring about in the veterinary columns of the agricultural press which have been raised with quiet dignity to a highly utilitarian level.

Editor Quin, who is also clinical adviser for the staff he serves, joined the AVMA in 1920, the year of his graduation, and now occupies the important position of chairman of the

Dr. A. H. Quin

Special Committee on Vital Statistics, a preliminary report of which is published elsewhere in this issue. The reasons for his appointment to that office by President Bower are obvious. There is basic work to be done in a basic field which none is better qualified to accomplish. His society affiliations and work performed are too numerous to mention here.

As if writing an obituary for the long distant future one could add, among other things, that Ab Quin is an energetic and able member of a generation of veterinarians who never went A.W.O.L. in spite of the tough going.—*L.A.M.*

Nebraska

Under the headline "The Big Livestock Problem" the editor of the *Omaha Daily Journal-Stockman* admonishes operators of livestock farms to promote and protect the health of animals and that no effort is too great to accomplish that end because (quoting) there is no profit eater to compare with animal sickness and death. Wisely, the livestock farmer is advised to study, plan, and work for animal health

and to employ the right kind of veterinarian, meaning the broad-minded kind who puts prevention of disease at the top of his duties. (Clipping supplied by W. T. Spencer, regional manager, National Live Stock Loss Prevention Board, Omaha.—Ed.)

Wisconsin

Pioneer Fur Farmer Dies.—John F. Nieman, 76, president of the Herbert A. Nieman & Company, Cedarburg Fox Farms, Inc., and Hiawatha Fur Farms Company, died at his home in Cedarburg, April 11, 1944. Mr. Nieman is credited with having solved many problems of large-scale production of fur-bearing animals and of establishing the popularity of silver fox fur garments. The output of his farms ranged from 30 to 40 thousand pelts annually. He is said to have been the instigator of scientific breeding, sanitation, nutrition, and disease control on fox farms.

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Veterinarians for Victory.—The story of the veterinary profession was never told better than it was by Miss Maude Wastrack, daughter of Dr. W. R. Wastrack, of Cedarburg, Wis., when she won a "Grade A" rating in the Milwaukee District Forensic Contest at the Messmer High School in Milwaukee. The contest was for "Victory Speaking and Dramatic Declamation" and here is what Maude told her audience:

Veterinarians for Victory

The government urges the farmer to raise more crops and more animals and the farmer is doing this, but he is not doing it alone. He is being helped. He is being helped by the veterinarian. But most people never stop to think about that. To most people, the veterinarian is only there when the animals are sick or injured. They never stop to think that he is giving his life for you. That he is protecting you, your food, your clothing, and your pets. Your food—by seeing that it is pure and wholesome. Your clothing—by seeing that it is the best quality. Your pets—by seeing that they are free of disease. The pet that was hit by your car, or the pet of the boy who is over there giving his life. That is what they want. They want their pets and they want them as they left them, and that is what the veterinarian is doing for them.

He is not an ordinary man—it takes a person with strength, courage, love, kindness, and understanding. Strength, because many times the animal does not know that he is being helped. Many times the veterinarian is hurt. Courage, because he never knows what to expect next. Love and kindness, because a veterinarian could not be a veterinarian without love and kindness. Understanding, because he can't ask his patients where they are hurt or how they were hurt. He has to know, and he can't guess.

The veterinarian's training is not easy. He goes to college for five years. It isn't all book learning either. He actually works with the animals. He learns understanding and loves them, and during the summer months he travels with the graduate veterinarian.

Now that it is wartime, a veterinarian is needed more than ever. He is needed in the Army as well as in civilian life. In the Army, he is needed in the cavalry, dog-training schools, for meat inspection and sanitation. The Army is offering a special training program. It is like a first-aid course, but it is not complete—it is just preliminary. The men who take this course are sent to places like the Burma Road and Alaska. And people ask why. Why? Because a veterinarian is needed any place under God's sun where there is a living animal.

Miss Maude Wastrack

There are about 130,000,000 people in the United States and seven to eight times as many animals, and about 13,000 veterinarians. It sounds like a lot, but it is not. It is too few; so few that retired veterinarians are returning to practice.

If you are looking for a job, a job that offers adventure, that takes courage and strength, love, kindness, and understanding—

a job that is full of humanity in time of war and peace—have you ever thought of being a veterinarian?

Wyoming

Dr. G. H. Good (K.C.V.C., '16) of Wheatland, former assistant state veterinarian, has been appointed state veterinarian by the State Live Stock Sanitary Board to succeed the late Dr. Harry D. Port.

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Governor Pays Tribute to Late Dr. Harry D. Port.—Governor L. C. Hunt of Wyoming paid the following tribute to the late Dr. Harry D. Port who had served as state veterinarian for seventeen years, and whose brief obituary appeared in the May JOURNAL:

"Dr. Port's untimely death is an irreparable loss, not just to state government, but also to all the people of Wyoming interested in the livestock industry. Since 1927, Dr. Port's intelligent and progressive administration of the livestock and sanitary laws has been a standard for all western states. Dr. Port, because of his fine personality and friendly attitude, was appreciated and respected, not only by his fellow workers in the capitol building, but by people all over the state, especially those with whom he came in contact in the execution of his official duties. Indirectly, the prosperity of a great portion of our people depended on the doctor's professional knowledge and his fine administrative ability."

After graduation from the Chicago Veterinary College in 1914, Dr. Port returned to northern Wyoming to practice. He was a deputy state veterinarian in 1917-1918, and served as state veterinarian from 1927 to the time of his death. He was a past president of the U. S. Live Stock Sanitary Association, and an active member of his state veterinary association and the Inter-Mountain L.S.S. Association.

COMING MEETINGS

Pacific Northwest Veterinary Medical Association. Meeting scheduled for July 10-11, 1944, is postponed indefinitely.

Maine Veterinary Medical Association. Belfast, Maine, July 12, 1944. S. D. Merrill, South Paris, Maine, secretary-treasurer.

Virginia State Veterinary Medical Association. Hotel Roanoke, Roanoke, Va., July 12-13-14, 1944. E. P. Johnson, Box 593, Blacksburg, Va., secretary.

New Jersey Veterinary Medical Association. Sea View Country Club, Absecon, N. J., July 14, 1944. J. R. Porteus, Box 938, Trenton 5, N. J., secretary.

Vermont Veterinary Medical Association. The Tavern, Montpelier, Vt., Aug. 12, 1944. G. N. Welch, 43 Union St., Northfield, Vt., secretary-treasurer.

American Veterinary Medical Association, eighty-first annual meeting. Palmer House, Chicago, Ill., Aug. 22-24, 1944. J. G. Hardenbergh, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

American Animal Hospital Association. Palmer House, Chicago, Ill., Aug. 25, 1944. R. E. Ruggles, P. O. Box 303, Moline, Ill., secretary.

American Association for the Advancement of Science. Cleveland, Ohio, Sept. 11-16, 1944. Sam Woodley, Smithsonian Institution Bldg., Washington 25, D. C., assistant secretary.

American Public Health Association. Hotel Pennsylvania, New York, N. Y., Oct. 3-5, 1944. Reginald M. Atwater, 1790 Broadway, New York, N. Y., chairman, program committee.

Short Course for Veterinarians. Purdue University, Lafayette, Ind., Oct. 5-6, 1944. C. R. Donham, Dept. of Veterinary Science, Purdue University, head.

Eastern Iowa Veterinary Medical Association. Hotel Montrose, Cedar Rapids, Iowa, Oct. 10-11, 1944. C. C. Graham, Wellsburg, Iowa, secretary.

United States Live Stock Sanitary Association. LaSalle Hotel, Chicago, Ill., Dec. 6-7-8, 1944. R. A. Hendershott, Trenton, N. J., secretary-treasurer.

STATE BOARD EXAMINATIONS

Virginia—The Virginia State Board of Veterinary Examiners will hold its next examination at the Hotel Roanoke, Roanoke, Va., at 9 a.m., July 12, 1944.

Iowa—The Iowa Veterinary Medical Examining board will hold its next examination for the licensing of veterinarians on Aug. 28-29, 1944. Applicants are asked to be in the office of the Division of Animal Industry, State House, Des Moines, Iowa, not later than 8 a.m., Aug. 28, 1944. Address inquiries to C. C. Franks, chief, Division of Animal Industry, State House, Des Moines 19, Iowa.

DEATHS

John Wilfred Elliott, 83, prominent retired Aberdeen veterinarian, died at his home May 3, 1944. Dr. Elliott was born at Clinton, Ontario, Canada.

Harry G. Lodge (C.V.C., '09), Clarksville, Ia., passed away following a heart attack, at his home, May 3, 1944.

Mrs. C. J. Cooper, wife of Dr. C. J. Cooper (ONT., '02), government veterinary officer at Hamilton, Bermuda, died at their home May 9, 1944, after a short illness. They had been married thirty-nine years. Dr. Cooper joined the AVMA in 1930.

THE VETERINARY PROFESSION AND THE WAR

ASTP Discontinued for Veterinary Classes Except Seniors—Option of Discharge or Transfer to Active Duty

Beginning late in May, the War Department gave notice to veterinary college authorities that the present senior classes of trainees would continue training until graduation, but that further training of juniors, sophomores, freshmen and preveterinary students under the Army Specialized Training Program would be terminated at the end of the current term, quarter or semester. No additional enlisted men will be assigned to ASTP units for preveterinary or veterinary medicine.

DISPOSITION OF TRAINEES

The official instructions provide that, at the end of a specified term, quarter or semester (depending upon the schedule of the veterinary college concerned), all veterinary and preveterinary ASTP trainees, except those enrolled in the senior class, will be transferred to a unit of the Army Ground Forces, *or discharged, at their option.*

Discharges will be at the convenience of the government under the provision of Section 10, AR 615-360. The above procedure will also apply to preveterinary students who are members of the Enlisted Reserve Corps, unassigned and continued on inactive status under Paragraph 3(e), Circular 117, WD, 1944, and those enlisted men on active duty who are now on interim duty pending assignment to an ASTP unit for veterinary training.

The number of enlisted men electing to remain in service will be reported to the Adjutant General, attention Reclassification and Replacement Branch, for assignment by the Commanding General, Army Ground Forces.

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The effect of the foregoing will be to bring to a close, within the next few months, the veterinary aspects of a program inaugurated in the summer of 1943 "to assure the Army the annual loss replacements for medical, dental, and veterinary officers" by training a sufficient number of enlisted men who, upon receipt of their appropriate degrees, might be appointed in the Medical, Dental, or Veterinary Corps of the Army. According to estimates of prospective needs, the ASTP has provided an ample number of replacements for Veterinary Corps Officers. Although no official announcement has yet been made, it seems probable that dental training under the Army program can be terminated in the near future but that Army requirements will necessitate the continuation of the medical program until next year, at least.

The option of disposition provided for the students in all classes except seniors permits those who elect discharge to continue their veterinary education at their own expense. As civilians, they revert to the jurisdiction of their local selective service boards, which may defer them in accordance with existing recommendations of the Selective Service System for veterinary and preveterinary students in recognized colleges. Each such student should be covered by Form 42A Special, carrying the endorsement of the appropriate state director of Selective Service. The termination of veterinary ASTP training in no way alters the deferment eligibility status to which students in recognized veterinary schools are entitled.

ENCEPHALOMYELITIS SEASON APPROACHES

July, August and September are the months when serious outbreaks of Equine Encephalomyelitis have occurred.

If an extensive outbreak should occur this year, will it catch a large proportion of the horses in your community susceptible because of not having been vaccinated? If so, it will be both a local and a national calamity.

A serious outbreak would place such a demand upon the time of practitioners that it could not be met without neglecting other important work.

There are many sound reasons why preseasonal vaccination should be done—There are no sound reasons why it should not be done.

To urge farmers to have their horses vaccinated against encephalomyelitis is genuine cooperation in our war effort.

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AVAILABLE TO QUALIFIED VETERINARIANS ONLY . . . this sterile, nonviable vaccine confers protection of an average eight months' duration when used in a 5 cc. dose on non-exposed healthy swine of all ages—except pigs weaned less than two weeks.

HOG CHOLERA VACCINE

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Crystal Violet

Jen-Sal Crystal Violet Vaccine is a carefully standardized and scientifically sound immunizing agent. All lots are safety and potency tested on live pigs—according to B.A.I. specifications—before release for sale.

At once safe and dependable, this new cholera prophylactic, now backed by extensive field usage, opens up new possibilities for veterinary service to the nation's swine industry.

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Vial 250 cc. (50 doses) 12.00
Code: VILET . . . .

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